The Information Resource for LightWave, Video Toaster, Flyer, Inspire and Aura Users

NewTekNIQUES

March/April 2000
www.newtekniques.com

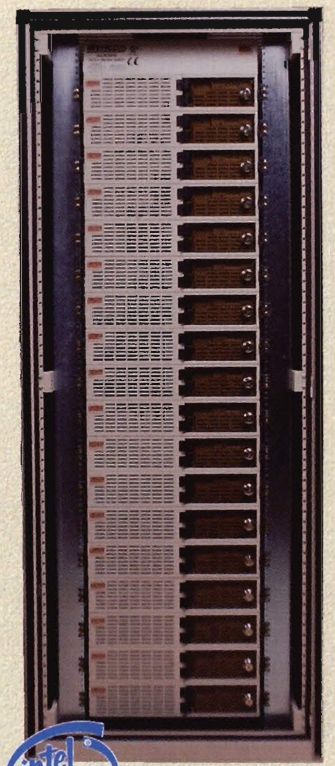
The JOY of SOCKS

0 74470 91603 1 04>
U.S. $6.95 CAN $9.95
AN ADVANSTAR PUBLICATION

Carrera Designs Custom Solutions for Real World Applications

NLE • COMPOSITING • ANIMATION • MULTIMEDIA • HIGH PERFORMANCE TECHNICAL COMPUTING

Which Carrera Solution is Right for You?



intel inside

Carrera RenderRak™ Render Farm with 18 Dual Pentium III racks.

Perfect for:

- ✓ *Lightwave*
- ✓ *Renderman*
- ✓ *Digital Fusion*
- ✓ *Linux Beawulf Clusters*

- **RenderRak ™ Render Farm with single or dual Pentium III Processors**
- **RenderCube Pro™ Professional Editing System**
- **Scream'n Demon™ for Dual Athlon or Alpha UP2000 High Performance Computing Clusters**
- **RAID**
- **Myrinet Gigabit Ethernet**

Carrera provides turnkey hardware and software solutions for the Animation, Compositing and Non-linear world. We manufacture Rock Solid hardware from Render Farms and Clusters to HD and NLE Workstations. Working closely with companies like NewTek, In-Sync, Eyeon, DPS, Matrox, 3Dlabs, Antex, we fine tune *Custom Configurations THAT ROCK!*

RenderCube Pro™ Professional Editing System

NewTek
Video Toaster

Video Toaster NT

LightWave 6.0

Scream'n Demon™ 4U rack with dual Alpha processors, removable hard drives and redundant power supply for high security, fault tolerant applications

DVDit!
COOL 3D
ACID

Matrox DigiSuite LE & RT2000

To choose your rock solid custom configuration please visit us at **Carrera.com**

or call

1-800-576-7472

Web #103

DIGITAL FUSION

Carrera Systems

All logos and trademarks are the property of their respective owners.

www.carrera.com • 909-280-5292 • Corona, California

NewTekNIQUES

CONTENTS

Vol. 4, No. 2, March/April 2000
www.newtekniques.com

ASSEMBLING A NEW VIDEO TOASTER SYSTEM: NUTS AND BOLTS FOR DIY
by Bill Evans
Page 18

THE JOY OF SOCKS MTV'S SIFL & OLLY
by Dick De Jong & Molly Dinkins
Page 8

SPECIAL REPORT
New and Two Times Hotter: Aura 2.0 and Toaster 2.0
Page 7

COLUMNS

Impressions:
Dedication .p. 2
by Dick De Jong & Molly Dinkins

Visions:
Fulfilling Promises . . . . .p. 4
by Tim Jenison

Buzz Saw:
The Video and the Fury . . . . .p. 6
by Chuck Baker

Plugged In:
Marching Orders . . . . .p. 22
by Bob Hood

Blazing Aura:
Lighting the Fire . . . . .p. 24
by Bohus Blahut

Toast Master/Flying High:
Wrestling Better Transitions out of the Toaster . . . . .p. 34
by Bohus Blahut

Mojo:
Kick Me .p. 48
by Mojo

TUTORIALS

Let's Get Verisimilitudinous! . . . . p. 14
by Montana Joe Lawson

The Light at the End of the Tunnel . . . . p. 28
by Jared Brookes

ON THE COVER This issue's cover, "Cybersocks," features MTV's Sifl & Olly hitchhiking on a New Video Toaster card. The image was composited in Aura by Patty Whisenhunt with LightWave backgrounds by @mic.

Impressions

A FEW WORDS FROM OUR EDITORS-IN CHIEF

DEDICATION

by
Dick De Jong &
Molly Dinkins

As the Editors-in-Chief of this magazine, we follow in the footsteps of two passionate, dedicated editors, dhomas trenn and, before him, Joe Tracy. Writers appreciated dhomas for his devotion to good writing and fine grammar. Artists welcomed his visual sense and his determined aesthetic. Joe is famous for his tireless energy and insatiable curiosity for what is new. Together, they have infused substance and dynamism into this publication. We intend to maintain the tradition that these two colleagues strove to establish.

As for us, we have been around awhile. We have been the feature writers/editors since *NewTekniques* began. Indeed, we have collaborated for over 23 years as writers, video producers (to shoot our first documentary, we used a portapak), graphic artists, photographers, and more recently, animators and Web designers. In the midst of that, we owned a fine art gallery for ten years. We have used the Toaster since 2.0 (we still have a 1992 issue of *Bread Box*) and we survived .9 Flyer.

For the last three years, we have produced LightWave Theater, the annual celebration of LightWave art and artists from around the world. We have moderated film and animation panels for NewTek Expo, DCC Expo, the Hollywood Film Festival, and South by Southwest.

We have written articles on more than 30 animation studios in the U.S. and abroad. We enjoy reporting on the talented and dedicated artists who share their endless creativity and imagination. They never receive enough credit for the riches they have bestowed.

Indomitable Spirit

We live in Austin, Texas, (an armadillo's roll from NewTek). South by Southwest, a major annual music, film, and interactive conference, just ended here. One night recently, we had the privilege to view *Dark Days*, an amazing documentary by an equally astonishing first time director, Marc Singer. The film literally shines the light on a group of homeless men and women who live deep within the pitch-black train tunnels underneath New York City.

Their stories are compelling, but Marc's tale of making the film is just as dramatic. He had never used a movie camera – he had to be shown how to load film. He lived underground, homeless himself, for two years. Because he had no money for film development, (Kodak had donated the film stock), he shot 50,000 feet of film before he saw a single frame. What a magnificent leap of faith! It took him six years to complete the project.

No, he did not use any NewTek products. What is the point of the story? We saw this film with Philip Nelson, NewTek's Central Region field representative. Collectively, our first thought after hearing Singer's story: we need to put a New Video Toaster in his hands. He is the epitome of the gutsy, determined independent artist for whom NewTek's wares are created.

These products – in their latest beta versions – did reach the socks of *Sifl & Olly*, and a perfect fit they were. The MTV series by Liam Lynch and Matt Crocco might never have happened without the versatile (and economical) contributions of the Toaster, Aura and LightWave – tools that continue to match the highest standards in the Industry.

With the imminent release of the New Video Toaster 2.0 suite, once again, NewTek is providing a complete set of video production tools. With LightWave [6], Aura 2.0, and Toaster 2.0, NewTek is giving artists, like Liam and Matt, more power to realize their vision than ever before. As Mojo says in his column, "We're all running out of excuses."

NewTekniques University

One final note, we realize that the magazine is about *techniques*. We plan on giving you as many quality tutorials as we can fit into every issue. What good are the tools if you do not know how to use them?

Remember that we are serving a diverse community: from original Amiga Toaster owners to New Video Toaster owners, with LightWave and Aura artists in between. Until we can expand the number of pages of the magazine, (we are working on it; please, renew your subscriptions), everyone will need to share the print real estate. The spillover of content will be put on our Website. Come and visit us at www.newtekniques.com.

NewTekniques

VOLUME 4 • NUMBER 2 • Published by ADVANSTAR Communications
www.newtekniques.com

EDITORS-IN-CHIEF	DICK DE JONG AND MOLLY DINKINS EDITORS@NEWTEKNIQUES.COM
COLUMNISTS	BOB HOOD, BOHŬS BLAHUT, MOJO, TIM JENISON, CHUCK BAKER, JARED BROOKES
ONLINE	BOB KETCHUM, CECILIA, DAVE HAYNIE, JARED BROOKES, KERMIT WOODALL
ART DIRECTOR	MICHAEL VIGGIANO
GROUP PUBLISHER	ERIC SCHWARTZ
EDITORIAL DIRECTOR	KEN MCGORRY
PRODUCTION MANAGER	MARIA KRISTINA ADAMEK

NEWTEKNIQUES
201 E. SANDPOINTE AVENUE, SUITE 600
SANTA ANA, CA, 92707, USA
TEL: 714-513-8400 FAX: 714-513-8612

ADVERTISING SERVICES

ACCOUNT EXCECUTIVE	MERLE MODEL 617-351-4804 • mmodel@advanstar.com
MARKETING/PROMOTIONS	MONICA MATHIS 212-951-6638

SERVICES

SUBSCRIPTIONS/CUSTOMER SERVICE	888-527-7008 or 714-513-8693 FAX: 218-723-9437
CURRENT AND BACK ISSUE ORDERS	800-598-6008 or 218-723-9180 FAX: 218-723-9146
CIRCULATION MANAGER	DAVID HELD 800-346-0085
REPRINTS	MARY CLARK 800-822-6678 FAX: 541-686-5731
INTERNATIONAL LICENSING	TAMMY LILLO 218-723-9539 • tlillo@advanstar.com

CHAIRMAN & CEO	ROBERT L. KRAKOFF
VICE CHAIRMAN	JAMES M. ALIC
EXECUTIVE VP BUSINESS DEVELOPMENT	SKIP FARBER
EXECUTIVE VICE PRESIDENTS	WILLIAM J. COOKE, ALEXANDER S. DEBARR, DR. MORRIS R. LEVITT
EXCECUTUVE VP INFO TECH, CALL CENTERS & TELCOM GROUPS	OANNY PHILIPS
VP FINANCE, CFO & SECRETARY	DAVID W. MONTGOMERY
VP, TREASURER, CONTROLLER	ADELE HARTWICK
VP & GENERAL COUNSEL	ERIC I. LISMAN
DIRECTOR OF OPERATIONS	MICHAEL T. WELDON
GROUP CONTROLLER	COLETTE O'DONNELL

AN ADVANSTAR PUBLICATION

©2000 by Advanstar Communications. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including by photocopy, recording or information storage and retrieval system, without permission in writing from the publisher. Authorization to photocopy items for internal or personal use is granted by Advanstar Communications for libraries and those registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. Phone: 978-750-8400. Fax: 978-750-4470; call for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. For those not registered with the CCC, send permission request in writing to Permissions Dept., Advanstar Communications, Inc. 7500 Old Oak Blvd., Cleveland, OH 44130, or fax to (440) 891-2740.

NEWTEKNIQUES is an independent publication of Advanstar Communications. LightWave 3D, Inspire 3D, Aura, Video Toaster, and Video Toaster Flyer are registered trademarks of NewTek, Inc. Amiga is a registered trademark of Amiga International GmbH.

Printed in the U.S.A.

WHO WANTS TO EDIT LIKE A MULTI-MILLIONAIRE?

WHAT'S THE BEST WAY TO MIX BUSINESS AND PLEASURE?

WHAT'S SMALL, FAST, CHEAP AND EASY?

IF UNCOMPRESSED VIDEO IS BETTER, HOW COME IT COSTS LESS?

WHERE CAN I GET FREE DOUGHNUTS?

BOOTH S4931
NAB 2000!

NewTek 8200 IH-10 West, Suite 900, San Antonio, TX 78230 P.210-370-8000 F.210-370-8001

www.newtek.com

Web #104

Visions

FROM THE PAST, FOR THE PRESENT, AND INTO THE FUTURE

by
Tim Jenison
with Guest
Contributor
Lauren Jenison

FULFILLING PROMISES

"Within four years, your favorite television show will be produced by you, or someone you know."

I am quoting from the 1992 Video Toaster System 3.1 User's Manual.

Chances are, if you are reading this magazine, this promise came true for you. It certainly came true for me. Of course, that's really not fair. I know a LOT of people who have made a LOT of great shows, because many are Toaster and LightWave owners. And, I have to admit; a lot of them were my "favorite" shows BECAUSE they were produced with NewTek stuff. Pride in the home team, I guess.

Ironically, shortly after getting into this Video Toaster business, I mostly stopped watching television. I simply don't have much spare time. So it is very rare for me to watch a show regularly.

Except for *Sifl and Olly*.

I have three beautiful and eccentric daughters, Lauren, Natalie and Claire. One night, about a year ago, I walked past the TV and they were watching something stranger than usual. It was a sock puppet show and the puppets were singing a pop-sounding song about carrots. I sat down to see more and I was hooked. I had no idea it was produced with the Toaster and LightWave. All I knew was that it was my favorite show.

It soon became a daily ritual.

Turns out I actually had met the show's video team, @mic and Patty (Whisenhunt) at a NewTek party years earlier. Happily, since then, I have become well acquainted with them and with Liam (Lynch) and Matt (Crocco), the sock stars' imaginary friends. So yes, my really, really favorite show is produced by someone I know!

When we printed that promise many years ago, we were saying that desktop video would allow lots more people to get into the television business, and that has certainly happened. That's what NewTek is all about.

But for me, the *Sifl and Olly* story is the quintessence of desktop video success. Not that they got rich, but that they kept it pure.

@mic and Patty tape the show in a very small living room with a camcorder. The props are built in a garage from thrift shop junk. Liam and Matt write, direct, and act it themselves. And it is pure. No design-by-committee here! GOD, I love this show! It is innocent. It is ingenious and ingenuous. The world of *Sifl and Olly* is a bizarre one, but it makes total sense. It's Lambchop meets *Wayne's World*. They are the most lovable and hip socks you've ever met. And they can ROCK.

My daughter Lauren is here, and since she can type about a hundred words a minute, I'll give her the floor. Take it away, Lor'...

"Hi! It's hard to explain to someone who doesn't watch the show why it's so good. It's so different from other shows. Instead of canned laughter, you'll hear your own. Not cheesy, contrived lines, but the kind of real-world banter you would expect to hear from the booth behind you at Denny's. Not cookie-cut flat characters, but a diverse cast of zany personalities as colorful as...well... socks. I love it because it is creative, individual, and hilarious. I can honestly say my life would be different without the Socks. Long live *Sifl and Olly*!"

–Lauren

NewTekniques online

NEW ART GALLERY

www.newtekniques.com/ArtGallery/

The NewTekniques Art Gallery is designed to showcase the graphic work of LightWave 3D, Inspire 3D, and Aura artists.

Beetle by Chuck Leone

COLUMNS

LightWave Fundamentals: Cranes and Whips - An introduction to using the camera in Layout.

The Idea Factory: The Lucrative Cable TV Commercial Production Market - Bob explores using his Toaster/Flyer to produce commercials for Cable TV.

Playing with Fire: Aura 2 Tutorials – This is a new column featuring the just released Aura 2.0.

Industry Insider: A behind the scenes view of LightWave, New Video Toaster, Flyer, and Aura projects.

REVIEWS

Boris FX (Windows)

Spider (Windows NT)

STATION X STUDIOS
SPIDER

Visit & buy securely online at http://www.easyupgrades.com
for even lower prices and many more product descriptions & pictures

Easy Upgrades

E-Mail us: sales@easyupgrades.com
PO BOX 247 - Oxford PA 19363
(610) 932 9302 Voice (610) 932 9517 Fax

AMIGA Systems

Various configurations and revisions of Amiga & PC computer systems available. Be sure to visit our web site and see the whole selection available.

A4000 Real Tower	$	1599.00
A4000 Desktop	$	799.00
A3000 Tower Comp.	$	699.00
A3000 Desktop Comp.	$	299.00
A2000 Computer	$	299.00
A1200 Computer	$	99.00
A600 Computer	$	199.00
A500 Computer	$	99.00

Amiga Accelerators

Many other different boards and options available on our web site.
These three are the latest revisions.

CBM A3640 @ 25 Mhz	$	149.00
CBM A2630 @ 25 Mhz	$	179.00
CBM A2620 @ 16 Mhz	$	89.00

OS Upgrades & Kits

Numerous bug fixes and enhancements are waiting to be implemented into your system.

3.5 OS Upgrade Kit	$	49.95
- Requires 3.1 rom(s)		
Kickstart 3.1 roms	$	39.95
- A4000 or 3000 or 1200		
Kickstart 3.1 rom	$	24.95
- A2000 or 600 or 500		
3.1 OS complete kit	$	79.95
- A2000 or 600 or 500		
3.1 OS complete kit	$	89.95
- A4000 or 3000 or 1200		
2.1 OS complete kit	$	49.95
- A2000 or 600 or 500		
Kickstart 2.04 rom	$	14.95
- A2000 or 600 or 500		
Kickstart 1.3 rom	$	9.95
- A2000 or 600 or 500		
Kickstart rom switcher	$	29.95
- A2000 or 600 or 500 Allows use of multiple kickstart roms.		
CBM A2630 & A2620 v7.0	$	19.95
- For CBM A2620 & A2630 Accelerator Cards		
CBM A2091 7.0 SCSI hard drive controller update	$	19.95

Replacement Parts

Broke a key off of a keyboard, or just worn out? Power supply on the fritz? We've got replacements!

Replacement Keys	$	5.00
Replacement Keyboard	$	49.95
Mice,2 Button,**400 DPI**	$	14.95
Power Supplies	$	34.95
- 500, 600, 1200		
Power Supplies	$	99.95
- 4000 or 3000 or 2000		
High Density Disk Drive	$	99.95
DSDD Floppy Disk Drive	$	29.95

Y/C Plus YCP-20MA

Lowest cost 19" Color RGB Monitor!
Multiple use monitor has optional (4) BNC to DB9 cable can be used with any analog 15.75kHz video signal such as a color video printer or color RGB camera. Ideal replacement monitor for Amiga computer and is the only new color monitor available for the Video Toaster/Flyer System. Includes monitor cable for all Amigas.

Now Only $ 449.00

CPU Upgrades

They may be used as replacements or upgrades depending on your system. See our web site for details for each chip.These come with a lifetime replacement warranty.

Motorola 68060@50Mz	$	99.00
Motorola 68040@33Mz	$	89.00
Motorola 68040@25Mz	$	39.00
Motorola 68030@50Mz	$	39.00
Motorola 68030@40Mz	$	29.00
Motorola 68030@33Mz	$	25.00
Motorola 68030@25Mz	$	19.00

Math Co Processors

They may be used as replacements or upgrades depending on your system. Includes a limited lifetime replacement warranty. Experience up to an 800% increase in speed! See our web site for detailed information

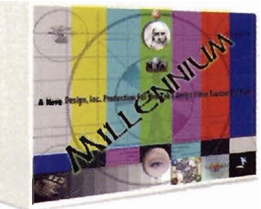
Motorola 68882RC50 PGA	$	99.00
Motorola 68882RC40 PGA	$	69.00
Motorola 68882FN33 Plcc	$	29.95
Motorola 68882RC33 PGA	$	59.00
Motorola 68881RC25 PGA	$	29.00
Motorola 68881RC20D	$	19.00
Motorola 68881RC20B	$	10.00
Motorola 68881FN20	$	10.00

Memory Chips

Used as replacements or upgrades depending on your system and include our lifetime limited replacement warranty. You may experience up to an 80% increase in speed. See our web site for all the details

Rambus Rimm 256x16	$	Mail
- 512MB 6, 7 or 800 Mhz		or Call
Rambus Rimm 128x16	$	these
- 256MB 6, 7 or 800 Mhz		prices
Rambus Rimm 64x16	$	change
- 128MB 6, 7 or 800 Mhz		daily!
256x4 Dips (2091,etc)	$	3.00
- 4 = 512k (.5MB)		
1x4 SC Zip (A3000 etc)	$	2.50
- 8 = 4096k (4MB)		
1x4 Page Zips (A2386)	$	5.00
1x32 Simm (A4000 etc)	$	15.00
- 4 megabytes of ram		
2x32 Simm (A4000T)	$	25.00
- 8 megabytes of ram		
4x32 Simm 16MB Ram	$	45.00
- Accelerators Use		
8x32 Simm 32MB Ram	$	80.00
GVP Simm32 16MB 60ns	$	60.00

Nova Design's Millennium for the Amiga Video Toaster/Flyer. Extremely cool, wildly powerful, and gives your Toaster and/or Toaster/Flyer amazing new powers to help you make your work look better than ever before with minimal investment! The Millennium package is presented by Newtek and has been produced by Nova Design, Inc. in cooperation with all prominent Toaster/Flyer developers. What's inside Millennium is not merely a single package. It is a collection of software, scripts, effects, fonts, backgrounds, and other content designed to update your Video Toaster and Flyer dramatically. Millennium was designed to be the largest, most comprehensive, upgrade you could put on your system. It's for the Toaster owner as well as the Toaster&Flyer owner. You'll find some old favorites are now part of the Millennium package. Some packages you will be familiar with and some will be brand new to you. Some existing packages have been upgraded significantly for the Millennium release and some have been made Toaster and Flyer friendly as well. Here's a list of what you'll find in the package.



Wipe Studio - You may be familiar with the 'lite' version-but this is the complete package! Use it to create your own wipes and effects for the Toaster and Flyer. **RenderFX** - Upgraded for Millennium, this package allows you to render your FlyerClip sequences down to a new FlyerClip. You can then layer more video, CG, and effects for a far more impressive production. **Flyer Utilities** - Includes utilities for converting Toaster wipes between 3.x and 4.x formats, Undeleting FlyerClips,Timecoding and much more. **ProMix** - Upgraded for Millennium, this package provides audio tools to let you add audio to video, import/export audio formats, add audio to FlyerClips and animations, and more. Fast Frames - Allows you to 'Toasterize' your Video Flyer by pre-recording CG sequences, Framestore montages, and create flying CG effects and more. **Fast Fuel Millennium** - Adds video deck control to the Toaster/Flyer interface for automatic clip recording. **Electric Scene Knife** - Time is money and this can save you literally hours of work. The Knife can take a FlyerClip and automatically find the different scenes within it, mark them, and even offer to cut them into separate FlyerClips for you. **Flyer Backup** - A script based system that can backup your actual FlyerClips to a hard drive or to removable media. **CGPilot** - The famous CG ARexx scripts that automate many time consuming CG tasks. **Toaster Wipes and Effects** - There are hundreds of these and most are available for both Toaster 3.x and 4.x so both Toaster and Flyer owners can use them. These include wedding wipes, fire wipes, basic animated wipes, cool soft gradient wipes, and fully rotoscoped matte wipes. **MegFX** - Over 40 Flyer 4.x effects that perform real-time, full dual-stream (dual-clip), split-screen and layering effects directly in Flyer projects with no rendering! **Backgrounds** - Hundreds of full color, professionally drawn, backgrounds for you to use in your CG pages or in ToasterPaint. **Full motion backgrounds** - FlyerClips of animated scenes, fire, and more. You can use these with your Flyer for CG backgrounds or as royalty-free stock footage. There are many other features of Millennium. We've really just touched the surface of all the tools and content that are included in Millennium to make your Toaster and Flyer more productive for you. Millennium also includes hundreds of new ARexx commands for scripting, programmer's manuals for the ProMix and RenderFX tools and more. It includes three CDROMs packed with wipes, effects, fonts, backgrounds, software and more; full printed documentation, a video tape overview of the package and a comprehensive color catalog of other Toaster/Flyer products.

NewTek

Aura Complete	$	699.95
Calibar Test Signal Gen	$	299.00
Film Grain	$	109.95
Hypervoxels 2.0+	$	239.95
Lightwave 5.6 Educational	$	1799.00
Lightwave 6.0 Complete	$	2250.00
Motion Pack	$	209.95
Video Flyer	$	1795.95
Video Toaster 2000	$	224.95
Video Toaster 4000	$	899.95
Video Toaster NT	$	Lowest

Seagate Hard Drives

It takes two 36.4GB to equal about an hour of uncompressed video storage.

ST150176LW 50.1GB Ultra 2	**$**	**909.00**
Barracuda 7200 RPM-5 Year		**Warranty**
ST136475LW 36.4GB Ultra 2	**$**	**797.00**
Barracuda 7200 RPM-5 Year		**Warranty**

CDRecorders & CDRW

Yamaha CRW8424sz	$	269.95
- 8x Writer 4x Rewriter 24x Reader		
TDK velo CDR & CDRW	$	299.95
- 8x Writer 4x Rewriter 32x Reader		

Complete high quality systems available at the lowest prices are on our web site for you!
Discounted pricing to students, educational institutions and government agencies.

adaptec

Ultra160 controllers have arrived! 160 Megabytes per second is now possible for improved throughput!

Reasons to buy from us -
1) We put everything is in writing.
2) You're credit card is secure because our secure certificate is with Verisign
3)Data entry is totally automated, from when you place your order, to when the product is shipped from our location.

http://www.easyupgrades.com/policies.html for our terms and policies. Prices & products subject to change without notice.

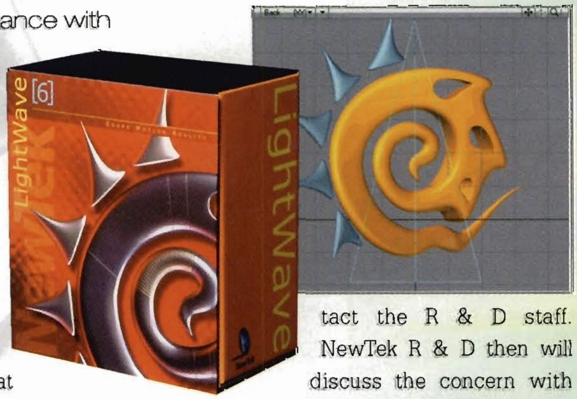
Web #105

NewTek's Guru of
Technical Support cuts
through the buzz straight to
the heart of the question.

by Chuck Baker

LIGHTWAVE [6]:
THE VIDEO AND THE FURY...

For anyone who is considering an upgrade to LightWave [6], the critical question is, "Will my current system run the product?" The buzz on this issue has centered on two subjects. First, people are concerned about which operating system (OS) to use, since NewTek recommends only Windows NT. The second topic is video cards. Since many animators have heard that cards that worked fine with LW 5.6 provide poor performance with LW [6], they are asking if their cards will work.



These issues may seem unrelated; actually, under the skin, they both revolve around OpenGL (OGL). (OpenGL is a 2D and 3D graphics application programming interface {API} that is used in LightWave to produce the color displays in Layout and Modeler.) The new LW [6] interface is completely implemented in OGL, for complete cross-platform portability. All legacy platform or OS-specific drawing routines have been eliminated from the software. In addition, enhanced OGL features, such as the ability to display textures in the OGL views, have been added. In summation, it is all OGL, and it is a richer OGL display. To accomplish this, NewTek has used a much larger subset of the OGL standard than in any previous LW version.

Windows NT is the recommended OS because its OpenGL implementation meets the needs of the new OGL-implemented interface for LightWave. Windows 95 and Windows 98 software OGL libraries are not implemented to the level required. However, in both cases, video cards with appropriate drivers may alleviate most, if not all, of the problems. Windows 2000 users have reported little difference in performance on OGL issues compared to Win NT. NewTek R & D probably will add Win2K to the compatibility list once the team has thoroughly evaluated this newly released OS.

As for video cards, the fact that a card does not immediately support the enhanced OGL when LW [6] is first installed may not be an insurmountable problem. During NewTek's LW [6] public beta program, many of the "Beta Force" folks found that downloading and installing new drivers from the manufacturers made problematic cards fully operable, and fast at displaying the new OGL interface.

Many manufacturers maintain contacts with the NewTek R & D team and list LightWave as a compatible product in their marketing materials and product packaging. They stay aware of compatibility issues and address them as they arise. If your card does not perform well with LW [6], you should first check for new drivers. If they do not solve the problem, notify the manufacturer about the issue. They want satisfied customers and value your business.

Also, you can notify NewTek Technical Support about the problem, and they will contact the R & D staff. NewTek R & D then will discuss the concern with the manufacturer, especially if they are a development partner who promotes LightWave compatibility.

Will *all* video cards currently in use eventually be able to support LW [6]? To be practical, no. Manufacturers may no longer support some older cards with new drivers. And a few new cards aimed at the game market may not have drivers that support the extensive OGL feature set that LW [6] requires. Other cards may have supported the limited OGL-implementation in 5.6 or earlier LW versions but will not support the OGL required for [6]. You should at least ask the manufacturer about new drivers before writing off your card and plunking down money on a new one.

Consider one caveat about video card drivers: sometimes, the newest is not the best. One Beta Force user reported that the most recent driver for his card introduced more problems than his older driver did. He then installed the second most recent driver, which he had previously bypassed. It produced great results.

Modeler, which by default uses four OpenGL viewports for its quad-view, will be the most common source of trouble for Win 9x OS users. Arnie Cachelin of the LightWave programming team has this tip: Modeler behaves well on his Win 98 system if he reduces the number of viewports to two. Since Layout also can be operated in multiple viewports, it would be best to observe the two-viewport limitation in Layout as well if you are using a Win 9x OS.

To better comprehend the issues of OGL support, here are two links:

http://www.opengl.org/Products/DriverTypes.html

http://www.opengl.org/Products/Accelerators.html

In particular, the first link will help puzzled end users understand why a card and driver may be great for the OGL display used in games but not for a full-blown graphics application such as LightWave. The second link describes characteristics of quite a number of OpenGL cards available for Windows and Mac platforms.

For those animators with a venturesome bent, you can engage LW's experimental features using the key combination CTRL+SHIFT+F1. Among other things, this turns on some "in-progress" OGL routines. The display of objects with bitmapped textures is faster and smoother, those with procedural textures perform pretty much the same. This feature seems to be particularly effective with the new GeForce-type cards. Please, remember, experimental features may not be as stable as the production code, so *use at your own risk.*

Chuck Baker is the Director of Customer Support and Services for NewTek. You can email him at chuck_baker@newtek.com.

New and Two Times Hotter

Aura 2.0 and Toaster 2.0

In early March, as. the National Association of Broadcasters (NAB) convention was fast approaching, the pulse was quickening in the halls of NewTek's headquarters in San Antonio. To cram in as many goodies as possible, the development cycle is always pushed to the final moment. "It's creative procrastination," founder Tim Jenison admits "A week before the show, 90% of it will be nailed down."

The blueprint, though, has been on the drawing board for years. "The goal of 2.0 is getting back to the original Toaster," vice president Donetta Colboch says, "everything you need to make a television show, on your desk." To achieve that objective in 2.0, NewTek has designed an impressive list of features: integrated switcher software with a breakout box, a storyboard editor, dual stream realtime effects, 3D DVEs, a new powerful character generator (CG), a downstream keyer, and native AVI capture and playback. To complete the package, Video Toaster versions of Aura 2.0 and LightWave [6] are included.

Attempting to pin NewTek down to a definite shipping date is futile. Rest assured that they want to put 2.0 in your hands as soon as they can. They are projecting *at least* 60 - 90 days after NAB. "It is far more important to hold it and make it right," Colboch explains.

As for details, plans for the rack-mountable breakout box include multiple inputs and outputs (I/O), both video and audio. Video I/O will include component, composite, and Y/C. "There are tentative plans to have firewire ins and outs built into the switcher hardware," Toaster product manager Paul Lara says. The breakout box will be connected to the Toaster via a ribbon cable. The design does not require another PCI slot.

Audio I/O replaces the need for a separate audio card. And since native AVI includes both picture and sound, audio sync concerns should vanish. Also in 2.0, NewTek has designed software to convert uncompressed AVIs and RTVs to multiple formats including MPEG-1 and MPEG-2.

The storyboard editor has been built from the ground up and has a skins-based interface which means users can customize the look. "We really are shooting for Flyer ease with the editor," Lara emphasizes. Colboch adds, "Speed Razor stays in. It will be the timeline component."

Dual stream realtime effects will require more throughput from the video hard drives. The exact requirements have not been established yet. One of the big hits of last year's NAB was the display of 3D DVEs. With a LightWave plug-in compiler, users in 2.0 will be able to create their own eye-popping 3D effects.

"The downstream keyer through the switcher will give us what the Toaster and the Flyer never had, which is the ability to run video, have an effect to the next clip and the key stays up," Lara says. About the new, feature-rich CG program, "Konno is writing our CG," Lara says of the prized recruit, Masaaki Konno. "He was one of the pre-eminent programmers in Japan, where he wrote high-end broadcast CG programs."

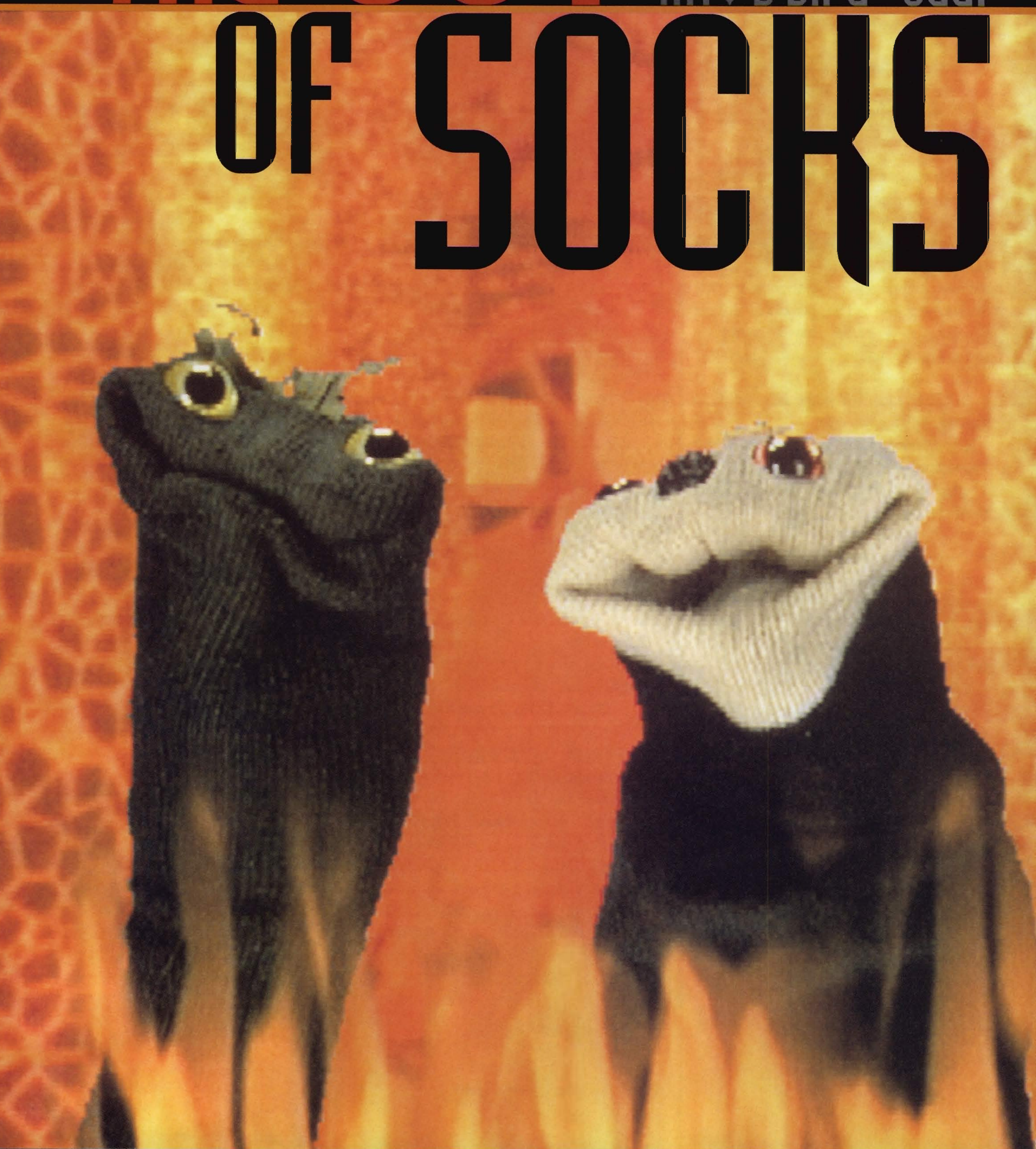
On a related note, Gary Porter, the Product Manager for Aura, disclosed that Aura 2.0 should be ready to ship at, or very soon after, NAB. This stealth program has been improved with powerful new features. Andrew Cross, the Head of Development for the Toaster, has implemented the Cross Keyer, a totally renovated chromakeyer. Aura 2.0 also has added motion tracking.

For up-to-the-minute details on the Video Toaster and Aura, check www.newtekniques.com for on-location reports from the NAB convention.

—Dick De Jong & Molly Dinkins

THE JOY OF SOCKS

MTV's SIFL + OLLY



New strides in sock puppetry and Toaster technology converge on MTV and the Internet

By Dick De Jong
and Molly Dinkins

Sifl & Olly is an MTV program starring two sock puppets. Yes, sock puppets. Sifl is the one in black, always on the left. His friend, and alter ego, Olly, in white, always appears on the right. Together, with an expanding universe of characters numbering over 400, Sifl & Olly perform stream of subconscious songs and skits riffing on love, oatmeal, and the human condition. Take, for example, this exchange:

Olly: WARNING: Sifl & Olly may be confusing to mothers
Sifl: WARNING: Mothers are very confusing to Sifl & Olly
Olly: WARNING: Sifl confused Olly's mother
Sifl: WARNING.... WARNING

Is it any wonder that this irreverent morality play is the favorite show of Tim Jenison, the iconoclastic founder of NewTek? And what perfect convergence that *Sifl & Olly*'s creators, Liam Lynch and Matt Crocco, hooked up with Video Toaster producers, Patty Whisenhunt and @mic. (That's his name. We are just glad that it is spelled with symbols that are on our keyboard.)

The first two seasons of *Sifl & Olly* were broadcast on MTV America in 1998 and 1999. (See Sidebar: *If at First*) The third season, which is now in post production, experiments with a totally new paradigm, both in production and presentation. MTV plans to premiere this season's episodes on the Internet. This is also the first show of its kind to be completely processed by the New Video Toaster. As @mic explains, "Every second and every image of the show passes through that chip on the Toaster card."

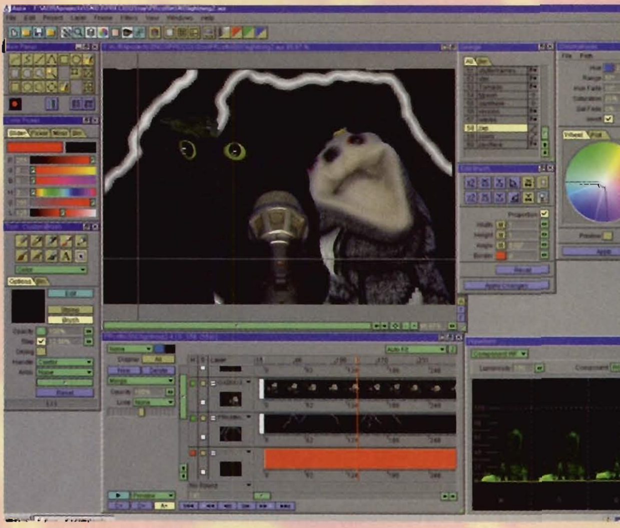
Before shooting begins, Lynch, Crocco and associate Michael Taylor have already recorded all the dialogue, songs and music in a friend's funky,

kitchen/studio in Nashville. "It's the most rag-tag beautiful studio that's so perfect for a show like this," describes Taylor. Lynch adds, "We'll be recording on a one-dollar Casio that we got at a garage sale, into super expensive equipment. The cord is worth more than some of the stuff we're using on the other end." The final product is burned to a CD.

Back at Patty and @mic's Bar Code Ranch studio, Aimee Levine and Roger Shaide are sewing and gluing costumes to their sock characters. The socks themselves have to be chosen carefully. "These guys always have to take into account the blue screen and green screen herringbone factor," Whisenhunt explains. "They have to pick out socks that have ribs that are not too wide or narrow. It's a lot more technical than people think it is." They scour thrift shops, garage sales and craft stores to find the perfect "sock scale" material to fashion the hundreds of sock puppets that have been created. "Sometimes, you get inspirations in strange places," Shaide says. They are also responsible for constructing miniature set pieces like the Bones & Blood float for the Bermuda Triangle parade.

The final alchemy of transmuting socks into pop icons takes place on an intimate and economical set at the Ranch. Lynch, the puppeteer, sits facing a blue screen. His arms are propped up so that the sock puppets can be seen over his shoulder by the camera less than a foot behind him. He is surrounded by a cage of pipes and clamps that hold lights and support sets.

For the first two seasons, the show was taped with a Beta camera run by a union operator. This year, @mic has decided to do his own shooting on a Sony TRV900, the little 3-chip DV camera. They are running the Y/C signal directly into the New Video Toaster (housed in a dual PIII 500 MHz IBM IntelliStation) and are capturing the live video through SpeedRazor onto their Medea VideoRaid 6/225 RT.



During the recording, Lynch choreographs Sifl & Olly to the playback of the CD. He runs through two or three takes until everyone is satisfied. Patty is at the helm of the IntelliStation capturing video and cataloging takes. Coming from such a gonzo production background, it is surprising how meticulously organized @mic and Patty are with their shot numbering. When a session is completed, Patty deletes the unwanted takes off the hard drives. This practice preserves precious hard drive space and makes post-production much more efficient. "It is almost like pre-editing," @mic says, "because the pieces are organized in numerical order."

After shooting is completed, Patty and Matt Crocco slam out a rough-cut of the vignettes. In previous seasons, @mic and Patty would do preliminary image sequencing with the Flyer, but the final edit was performed on an Avid. This time, all of the edit-

In the Family

Liam Lynch is not the only talent in his family. His sister, Jennifer Niederst, is a well known web designer who has written Web Design in a Nutshell. She creates and maintains the hugely popular Sifl & Olly site: www.siflandolly.com.

She loves to retell this revealing story about her brother's thousand bunnies. One spring around Easter, when Liam was five years old, he would spend hours alone in his room. "He wouldn't let anyone in, and aside from the Goofy Greats records playing on the record player, everything was very quiet," Niederst says. On Easter morning, he emerged with his handmade bunnies – each uniquely drawn, colored and cut, ranging in size from an inch to three feet tall. He divided the warren and presented over one hundred to each family member.

"To this day, when Liam works on a project, he becomes completely obsessed and disappears into his house and studio," his sister states. "When he emerges, you can bet that he has been productive on a scale that is almost maniacal!"

ing will be done on the Toaster, which gives Patty and @mic much better control over the design of the effects. "I held off building LightWave scenes until all of the footage was in the computer," @mic says. "Since there's no back and forth between the Avid editor and me, a lot of the problems have been removed."

Almost every shot has a LightWave or Aura background composited over the blue screen. "Liam always has a specific vision of what he wants included," @mic says. "But then he gives us lots of room to execute the shots in a way we think works." @mic reports that in most situations Speed Razor can handle the chromakeying. If a shot has a lighting problem, then they turn to Aura to solve it.

To see what the final product will look like on the Internet, @mic renders small screen sized AVIs. He says that they always have the preview window up in Speed Razor. That playback also is a good indication of the Internet look. He has adjusted certain effects to work better at the Internet resolution. "In a Peto and Flek scene," @mic explains, "I made the film effect more coarse and graphic so it would show up on people's screens."

In a number of shots, Patty and @mic are building up three or four layers in Aura. "The advantage of the Toaster is that the video is uncompressed," says Paul Ford, NewTek's liaison for the project. "You can stack as many layers as deep as you want, and there will be no artifacts."

"This is what's so exciting about this time around. We're using this new technology that seems like it

If at first...

"At 2 a.m., I got a call from Brian Graden from MTV," recounts *Sifl & Olly* co-creator, Liam Lynch, who was in England at the time. "He liked our humor and said, 'we want you to do a half hour show, put together a pilot, and call me in two weeks!'"

The story, however, begins back in Ohio when Lynch and new next door neighbor Matt Crocco, both eleven years old, started writing songs and comedy skits and recording them on tape. Through college days and a few years in Nashville, they developed an interview format for their songs, jokes, and "other weird stuff." *Sifl & Olly* debuted by serendipitous coincidence. Lynch stuffed a bunch of audiotapes and carted them off to Liverpool, England where he was selected from candidates worldwide to study with Paul McCartney at his newly founded Institute of the Performing Arts.

Lynch respliced a broken, unlabeled tape that happened to be "a little bitty commercial that started with 'hi, my name is Sifl and this is my friend, Olly,'" he says. At that time, Nick Parks' famous chatty claymation commercial with Wallace and Gromit was airing on British TV. Lynch was inspired. "I thought it would be so cool to do something like that, but I couldn't animate," Lynch admits. "So, I thought the only way I could do it was with puppets. So, I got two socks out of my sock drawer." After videotaping (with a borrowed camera) three 30 second shorts, "I realized I had a feel for it," he says. So Lynch established his style of over-the-shoulder puppetry with syncing socks to the skits and songs.

"I shot ten of them and I thought they would make great 'idents' for MTV Europe and MTV America," he describes. "Europe jumped on it." Lynch returned briefly to the U.S. to make more with Crocco and Michael Taylor, the third collaborator. Seventy 30 second shorts were broadcast in Europe for two years. To crack MTV America, Lynch sent a tape (it included 120 shorts) back to Los Angeles.

For six months, he phoned every single day from England to locate where the tape was. "Every time I found the tape on someone's desk, they were fired the next day," Lynch says. (By this time, Crocco and Taylor join Lynch in the interview. A chorus of voices narrates the hysterical saga.) "For four weeks, some guy was on jury duty. One tape literally turned to dust, and another was smashed to pieces. Liam kept pushing, pushing, pushing." Until Graden called.

So in January 1998, Lynch, Crocco, and Taylor convened in L.A. An MTV executive phoned Patty Whisenhunt and asked if she would meet with the trio. She recruited her partner, @mic. Together, the team created and taped vignettes of songs, skits, commercials and jokes – all starring Sifl & Olly and their friends. Soon thereafter, they had their pilot.

And the rest is Hollywood history.

— **DDJ & MD**

was made for us," says Crocco.

At last report, Patty and @mic are still preparing bits and pieces for MTV's review process. Even though the program is being broadcast over the Internet, the show still has to pass through Rights and Clearances, and Standards and Practices.

The final product for this season will be 14 four-minute vignettes – browser sized chunks for the cyber Sockheads who are ardent fans of the show. Julio Kollerbohm, the MTV line producer for *Sifl & Olly*, says, "MTV is really embracing the Internet. Part of the plan is to create material specifically for that broadcast entity. What better choice than to use *Sifl & Olly* as a springboard?" A date for the launch on www.mtv.com has not been set yet.

For delivery over the Internet, MTV plans on employing three compression schemes. One will be optimized for a 56K modem, a second for a T1 line, the third will be streaming video. "With the Toaster, we say, 'Create once, deliver anywhere.'" Ford states. "The first time this video will be compressed is when it goes to the Internet."

"It's the way things are going to be done," adds Lynch. "It's so nice to be a part of the baby steps. I think it's going to take awhile to convince these networks that have been doing it the same way over and over again that it can happen a different way. And it should."

Kollerbohm, who does all of the West Coast VHI development, already seems convinced. He is in discussions with Lynch and company to produce *El Powerful TV* for broadcast TV using the same straight to disk production model. He is also exploring other projects that would be shot on DVCam and edited on the New Video Toaster.

The Rebel Force

During a shoot out in front of their studios in Los Angeles, @mic recalls saying to partner Patty Whisenhunt, who lay on the floor beside him, "If they shoot the Toaster, I'm going out there to kill them."

Bullets richocheted around the building. Patty, @mic, and the Toaster survived, but scars are permanently etched into the walls of a room full of semi-retired electronic relics – historic pinball machines, classic computers and mechanical flotsam – toys for @mic, a Jack of all production trades. In 1998, when Leslie Jenison accompanied her husband on a tour of the *Sifl & Olly* set, she looked in the storeroom and said to Tim, "Is this familiar? It looks exactly like the place you started your company in."

Little surprise, then, that wedged among the obsolete museum-quality electronic gadgets is a file on Jenison and NewTek. Whisenhunt says, "@mic has been obsessed with NewTek, the Amiga, and all that stuff. He has collected all the articles and features on Tim."

Next door in Whisenhunt's precious studio, she has accumulated a floor- to-ceiling assemblage of kindergarten art supplies, squishy plastic eyeballs, headless dolls, six cats, a cat bunk bed, two parrots and bottles of Orbitz – a clear Canadian soda pop with floating orange balls that move like a lava lamp. A Dada paradise.

A wizard videographer and veteran musician in the LA/Hollywood club scene, @mic built a legendary reputation for innovative experimental videos projected at music venues. For decades, he has been hauling truckloads of equipment around town to facilitate shows.

Over the years, @mic bartered, borrowed and traded time on friends' computers. In 1984, Carel Struycken (Lurch in *The Addams Family Movie*), loaned @mic an Amiga 1000. Years later, he used Struycken's Toaster.

One evening when Whisenhunt, a UCLA film graduate, animator, and kindred night owl, recognized @mic's Amiga at a music club, he became her close amigo. Their ten year partnership – high on adventure, low on income – bounced between music projects, corporate market research, and historical passions. Whisenhunt, a legend in her own right, is an off-again, on-again prop and set designer for MTV. Which is why she received a call in early January 1998 about these guys who wanted to make a sock puppet show.

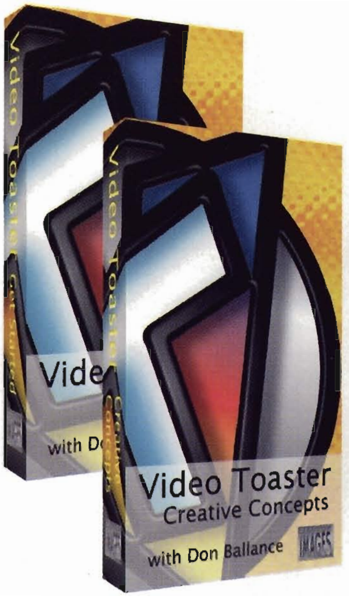
By the 1999 season of *Sifl & Olly*, @mic had cobbled together an Amiga-based Toaster/Flyer system with a DEC Alpha for LightWave rendering. On the dawn of the new millennium, NewTek's Paul Ford delivered the latest, greatest equipment to their door for season three. Whisenhunt describes Ford as "our own little freedom fighter."

Summing up the years of scraping together money and computer components to produce their independent projects, Whisenhunt boasts, "@mic and I are NewTek's poster children."

— DDJ & MD

Video Training for Digital Editing, 3D Animation and Special Effects

Train Your Brain



The New Video Toaster

Get up to speed fast with this complete video training series. Learn to optimize configuration settings, Editing Techniques, Compositing Tips, Animation & Special Effects. Discover how to maximize your abilities with this new "beyond broadcast quality" digital video creation system.

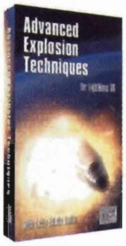
LightWave VT

AURA
CONVERGENCE
Aura VT

Complete series only $349.95 or $49.95 each +S&H

Advanced Explosion Techniques

with Emile Edwin Smith



Foundation Imaging's Emile Edwin Smith demonstrates techniques for creating realistic explosion sequences in LightWave 3D. Learn how to take any model and place it in an action packed explosion sequence complete with flames, sparks, shattering windows, burning understructure & flying debris

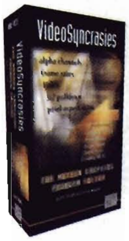
$49.95 +S&H

Modeling & Animating the Human Head

with Tareq Mirza

Learn the techniques used in creating models for the Starship Troopers animated series! Tareq Mirza provides step-by-step instruction for modeling, creating phoneme targets & applying facial animation. A systematic approach that provides the basis for creating virtually any head, real or imaginary!

$49.95 +S&H

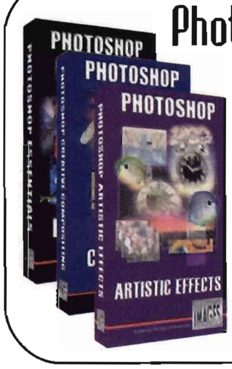


Videosyncrasies

The Motion Graphic Problem Solver

Motion graphic experts Chris & Trish Meyer provide the answers to key issues that can make or break an animation. Learn the fundamental concepts of alpha channels, frame rates & film transfer pull down. Manage fields to reduce rotoscope & masking work. Understand the primary issues with rendering variables, non-square pixels and avoiding image quality "gotchas". Essential concepts for beginner through advanced level artists, designers, video editors, compositors and 3D animators alike. It's the Money Tape!

Two tape set only $79.95 +S&H



Photoshop Artistic Effects

with Katrin Eismann

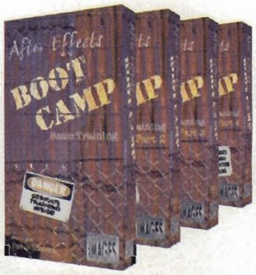
Think you know Adobe Photoshop? Well think again. Enhance your creative skills with advanced layering techniques & special effects. Discover powerful image enhancement capabilities. Master the History Palette & History Brush features. Learn quick navigation techniques & color management features for consistent image quality every time!

Complete series only $149.95 or $49.95 each +S&H

After Effects Boot Camp

featuring Taz Goldstein

Discover the powerful features of Adobe After Effects 4.x through hands-on exercises and in-depth exploration. Learn techniques for creating layered compositions and motion graphic animation for broadcast video, special effects & multimedia design. Taz combines his professional expertise with a unique blend of humor that makes learning fast & easy.



Complete series only $179.95 or $49.95 each +S&H

Call Toll Free
1-800-377-1039

On-Line Order Catalog
www.desktopimages.com

DESKTOP IMAGES

Desktop Images 1805 W. Magnolia Blvd. Burbank, CA 91506, 818-841-8980 fax 818-841-8023 email - sales@desktopimages.com
S&H add **$4.95** for first tape plus **$1.50 each additional tape**. CA residents add sales tax. For PAL format add $5.00 per tape.

N1299

Web #106

Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

LIGHTWAVE INTERMEDIATE

Let's Get Verisimilitudinous!

Beauty is Truth, Truth Beauty

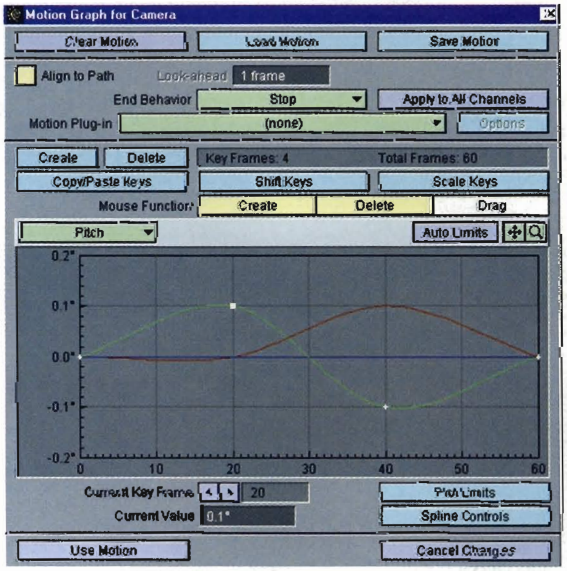
by
Montana Joe Lawson

One of Foundation Imaging's Starship Troopers shares his techniques on keeping it real.

Lurking the halls of Foundation Imaging not long ago, I had the opportunity to read an academic essay that described a certain special effects artist's work as "verisimilitudinous." At first confused, technical director Lee Sullivan and I tracked down the meaning of this 25-cent word. Basically, it translates to a truthful sense of reality, particularly as applied to works of historical recreation, fiction, and filmmaking.

It struck me that in the 3D animation world, we go to great lengths to be excellent character animators, or spaceship animators, or photorealistic designers; but all too often, that experience of "truthful reality" is missing from our animations.

The trick is to push beyond technical mastery and take our animations to the level of the audience's perceived notion of what is "cinematic." In many cases, this means dirtying down the quality of our work. Let me explain this seeming contradiction.



Look-ahead 1 frame
End Behavior Stop
Motion Plug-in (none)
Key Frames: 4
Total Frames: 60
Current Key Frame 20
Current Value 0.1°

Figure 1

THE CINEMATOGRAPHER'S TOUCH

The first thing John Allardice, a cinematographer and animator here at Foundation, taught us is that a human needs to be behind your camera. When you watch a technically beautiful film, take time to pay attention to the *edge* of the screen rather than focusing on the action. You will see the human touch at work: a slight alteration of the framing to accommodate the action, the sudden motion as the camera operator begins to follow (ever so slightly) a moment behind the action, or the tiny adjustment which brings the focus of the shot into an artistic composition.

These slight variations are what we, as animators tend to skip - sometimes even deliberately ignore - in the search for "technical perfection." Your audience, though, is on a different wavelength, one trained over a lifetime of television and movie watching. They *expect* those variations, even subconsciously. When you are attempting to sell the cinematic reality of your animation, those slight changes can be important.

A shot in *Starship Troopers* that still takes my breath away is an aerial flyby of a battle zone, looking down upon several soldiers firing from a trench. You will never convince me that it was not shot from a helicopter. The camera sweeps swiftly by, adjusts to the movement of the chopper, tries valiantly and just barely fails to keep up with the action. It's not a "perfect" shot. It does not stay focused directly on our heroes. But it does work as a real shot. Thus, what is a mere kids-show "moment" is

Higgins

elevated to a cinematic experience.

The way we achieve this effect is much simpler than you think. After you have established the first frame and the final frame of your camera motion, with whatever major adjustments are needed along the way, go back and, at about every 15 to 20 frames, make a slight rotation on the H (Heading) or P (Pitch) axis of the Camera. If you do not want major bumps in the motion, go into the [Graph Editor] and back off the motion slightly from the overall flow. (Figure 1, 60 frame motion graph of slight camera adjustments on Heading and Pitch) You will be surprised how much reality this one simple procedure can add over the length of a shot.

The B axis is rarely adjusted; because if you do, the camera seems like it is tipping over. This creates a look of sloppiness to the camera motion. The exception might be if we are trying to create the feel of a Steadicam or video news camera. In which case, B movement would be accurate and expected.

SUBTLE CHARACTER TOUCHES

People are *always* in motion. They never stop. They *can't* stop. Neither can most objects, especially those with life in them. Breaths are inhaled, hearts beat, muscles twitch. It's a never-ending symphony of motion.

As character animators, we strive to pick and choose those sometimes-unconscious motions that not only heighten the sense of continuing action and reality but also add personality to your character. We even attribute anthropomorphic motions to non-human characters, like the tapping toe of the hunting Raptor in *Jurassic Park*. These touches enhance the audience's feeling that there is a genuine brain at work, not just an automaton controlled by the strings of the animator.

(See "Higgins" image. Corporal Higgins bids farewell to a fallen Trooper in Episode 136 "Funeral for A Friend." The direct visual inspiration for this close-up was Radar O'Reilly's farewell to Colonel Blake in *M.A.S.H.*)

Become a people-watcher and observe humans in action; not just when they are in motion but especially when they are standing or sitting "still." An eye movement, a raised eyebrow, a tapping finger or foot, any of a billion small things can be added to your mental dictionary of actions. Later, when you weave them into your foreground, background, or characters, these special moments help define the scene as real.

Backbug

ASSEMBLIES: Reality quick and simple

In film and television, time is money. The more time you spend lovingly adding lights or objects and hand crafting them to perfection often means derailing your project's schedule and budget. How do we at Foundation keep our plans intact and still achieve artistry? Through the use of what we call "assemblies."

An underrated and very helpful feature of LightWave is its ability to "Load from Scene." Located in the [Objects] panel, this simple procedure is your key to creating distinct reusable elements separate from your main scene.

At Foundation, we use them to house light kits, pre-setup IK characters, pre-setup vehicles and bugs, and completely set up locations. Often, this work is completed weeks or months in advance of their actual deployment.

As animators create their scenes, they rarely add the "finishing touches" until the main action and camera work is completed. Assemblies also allow them to fine-tune the animation without a crowd of other objects complicating the situation. After a CGI Supervisor has approved the shot for its animation elements, the technical direction begins. Now, those assemblies come in handy, allowing us to build elements of a single scene from pre-assembled parts.

Before attacking a complicated shot, try creating the elements (timed appropriately) in separate assemblies, then Load from Scene into the final project. You may find it saves you hours of heartache!

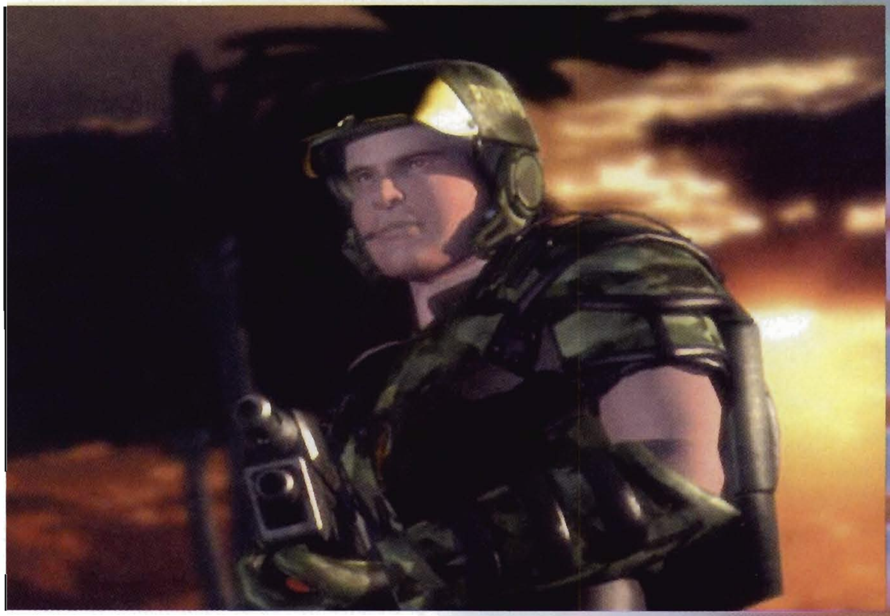
BACKGROUND ACTION

Every character has a motivation, even if they are only in the background. Extras in Hollywood have to keep in mind that their moment on screen, as blurred and far away as it may be in the finished product, is defined by an action which says "this is a real person or situation, not just background filler." It sells the moment.

(See Backbug image. "Even background bugs need motivation!" From Hawaii in Episode 137 "Spirits of the Departed.")

Be aware of the chance to show these moments, subtle as they may be. Again, observation is your best friend. In addition to watching real people, pay attention to those folks wandering in the background of a film. Every one of them was hired for the job. And every one of them is acting as if they are unique beings in the mass of humanity with their own hopes, dreams, purposes and mannerisms. Steal from the best and bring them to your background characters.

One note: as an observer, the mirror is not necessarily your best friend. While indispensable as a way to capture facial motion, you are just one person among billions of us floating on this orb. Even your family may have too many shared mannerisms to allow you to invent a variety of characters. Get out into the world. Watch people go about their daily business. Besides, it's a great excuse to get away from your monitor and breathe fresh air!



Maxbrut

LIGHTING

Our eyes are trained by the media to accept certain things as reality. For instance, we do not question the simple technique of "day-for-night" shooting, (using a dark blue filter and other adjustments to take daytime film footage and give it the feel of night). All of us suspend our disbelief and accept what we see on screen as "reality," complete with good lighting. Use this "trick" to your advantage.

Dofbru

(See Maxbrut image. Key, Fill, and Backlighting new recruit, Max Brutto, from Episode 137 "Spirits of the Departed.")

Knowing this fiction of film, you can employ the standard conventions of stage lighting to dramatize your work. A key light, a fill light, and a strong backlight can enrich the quality of a scene.

In most cases, we have to play to the audience's trained expectation of what is "real" in a filmic sense.

THE CAMERA THAT ROARED

Finally, the camera and its movement should obey the laws of physics: gravity and weight.

To paraphrase Jeff Goldblum's scientist from *Jurassic Park*, "You can be so busy showing that you *can* move the camera, you didn't take time to think whether you *should* move it." Before flying an audience into oblivion or across a room in 20 frames, first determine whether a 100-pound camera on a crane with five guys pulling it can start and stop that behemoth on a real film set in the equivalent amount of time. If the answer is no, the shot

Jenkins

will not read "realistically" to the audience.

In addition, think about the location. It is doubtful a full-size camera will fit into some of the areas that we place cameras in the animation world. Unless it specifically serves a story point, think about reframing the shot and moving the camera to where it might actually sit in a given locale.

This is a good time to toss in the concept of focal length. The optics of lenses behave in predictable ways that we attempt to duplicate in our projects. Rarely at Foundation do we use the ."LightWave default of 3.2 (or 24 mm) for our camera zoom factor. In fact, many of us set the default in the LW.CFG file to between 5 and 10 (50-75mm) or so.

EDITING Default Settings

Below are some of my homemade LightWave configuration defaults that you may use as your starting point. You can edit these settings in Notepad by opening your lw.cfg file (found in the Programs folder). Please, be careful before you alter your lw.cfg! Save a copy in a completely separate directory in case something important gets overwritten. Always take this standard precaution before changing a configuration file!.

DefaultSceneLength 200 (Just a useful starting point, long enough to cover most situations)

DefaultFPS 24.000000 (We use 24 fps at Foundation to create a more film-style look to our animation. If you use this rate, you will need to expand the playback on a Perception Video Recorder or in a video program to run at video speed of 30 fps.)

DefaultZoomFactor 10.000000 (As described in the article)

BoundingBoxThreshold 200 (Remember to set this *lower* to achieve better timeline scrubbing and previewing.)

ShowSafeAreas 0 (We rarely, if ever, use safe area determinations... it's far too restricting.)

ShowFieldChart 0 (Again, in the real world, hardly any camera operator frames things exactly in the middle.)

This "long lens" has some definite results. First, we lose most, if not all, of the fisheye look that can occur when moving in closely to our characters. That distortion should be avoided at all costs, unless it is necessary for a dramatic purpose.

In wide shots, a longer lens has more depth of field, (the area in focus in front and behind your main subject). When we pull in for a close-up, the depth of field will decrease. The background becomes fuzzier the closer we frame focus to the subject.

(See image Dofbru. "Heads up, Troopers! Depth of Field can be a cinematographer's best friend!" Scene from Episode 105, "Deep Trouble.")

Here's a radical concept for computer animators: position the camera in one place and leave it alone. Save the camera movement for dramatic shots. Soon, as your cinematic vocabulary builds, you will start to understand what "reads real" and what doesn't.

Ask yourself as you watch a film sequence "how did they do that?" Did a crane lift the camera into the sky? Did they "dolly" that shot along a track to follow the action? Did they hire a Steadicam operator to run up the stairs behind the actors? Observe *how* that camera moved during those moments. Then, try to duplicate that movement in similar situations in your own projects. You might discover that the computerish look of an absolutely still shot will take on new life.

GET READY TO RUMBLE!

Grasbugs

Most importantly, start watching films - especially those with impressive cinematography - with a different eye. Do not concentrate on the main story or action, but study the craft. The films of great directors and cinematographers are your best textbooks.

So, there you have it, a few ideas to improve your animation skills and to convince viewers that "this isn't computer animation." As time goes by and you incorporate these techniques into your work, you will begin to create a sense of personal style.

Now, it's *your* turn to get verisimilitudinous!

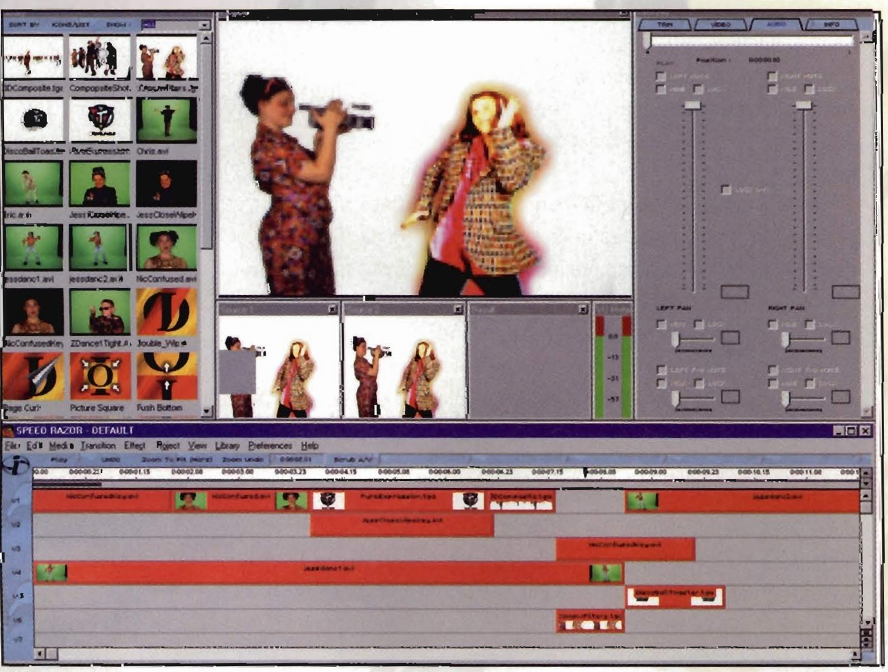
Montana Joe Lawson is a CGI Supervisor and Technical Director at Foundation Imaging. He and his wife Kelly recently welcomed their most important work of art, Joseph James, into their lives.

ASSEMBLING A NEW VIDEO TOASTER SYSTEM

By
Bill Evans

Nuts and Bolts for DIY

If you are thinking about jumping in and buying one of NewTek's New Video Toaster systems, you probably have a lot of questions about what options you should get. This article discusses processors, motherboards, video cards, audio cards and the drive subsystem you'll use to capture and playback uncompressed video. Though, before we begin, if you are not comfortable putting together a computer, installing an operating system, or tinkering with IRQ settings; I heartily endorse the idea that you buy a turnkey system from a trusted NewTek dealer. This article will still give you an idea of some of the options you may want to discuss with your dealer. In addition, computer systems from Dell, IBM and Intergraph are currently on the approved list from NewTek and more systems are sure to be added.


3DComposite.tga
CompositeShot.
DiscoBallToast.
Chris.avi
JessCloseWipe
jessdanc1.avi
jessdanc2.avi
NicConfused.avi
NicConfusedKey
ZDance1Tight.A
Double_Wipe
Page Curl
Picture Square
Push Bottom
SPEED RAZOR - DEFAULT
File
Edit
Media
Transition
Effect
Project
View
Library
Preferences
Help
Play
Undo
Zoom To Fit (Horiz)
Zoom Undo
LEFT PAN
RIGHT PAN

As you will read elsewhere in the magazine, NewTek is announcing at NAB the 2.0 version of the New Video Toaster. Because the new software will include power hungry features like realtime effects and 3D DVE's, the best rule of thumb is to buy the most muscle for your machine that you can afford, and give yourself an easy upgrade path. At press time, NewTek has not published the specification requirements for 2.0. As the release becomes imminent, you should be able to check their Web site, www.newtek.com, for up-to-date details. Unless otherwise noted, the information given here refers to the current 1.0 version of the New Video Toaster.

The heart of any computer system is its CPU or Central Processing Unit. Though most Toaster systems are currently running with Pentium III processors - and picking Intel's flagship processor is definitely a good option - the AMD Athlon and Intel's own budget processor, the Celeron, are working in a number of systems as well. Currently, the Athlon has the fastest clock rate; and according to their processor road map, it will be in the lead for the next 6 months at least. By the time you read this, 1+ GHz processors will be available from both Intel and AMD - over twice as fast as those needed to run the current Video Toaster system. So pick a price, choose Intel or AMD, and select a processor. If you are looking for a very inexpensive solution, you may want to go with the Celeron; but I wouldn't encourage overclocking them unless you know what you are doing. The New Video Toaster needs a good clean PCI bus, so overclocking is definitely not advised.

Do You Have The Digital Touch?

newMedia™ 2000
conference + tradeshow

Conference
May 15 - 18, 2000
Trade Show
May 16 - 18, 2000
Metropolitan Toronto
Convention Centre
Toronto, Canada

Discover all the products, services and information you need to integrate the newest digital technology into your business. See hardware, software, systems and solutions to help you start up, catch up or update -- and gain the competitive edge.

- Thousands of cutting-edge products
- Hundreds of exhibitors
- Learn from the leading experts and educators like Pixar, Grey Interactive, Shift Online, Rapp Collins Worldwide, CanWest Global, Adobe Systems, Inc. and more - over 130 sessions to choose from, with 10 dynamic tracks.
- Free Keynote Visionary Series by top presenters from the top companies in the world:
  Dr. Michael C.J. Cowpland, Chairman, President & CEO, Corel Corporation; Stephen Bartkiw, CEO, AOL Canada, Inc; Mike Abramsky, President, Rogers New Media.
  Plus, newMedia attendees receive FREE admission to LinuxCanada Keynotes
  Bob Young, Chairman & CEO, Red Hat Inc.
  Linus Torvalds, Creator of Linux
  Ransom Love, President & CEO, Caldera Systems, Inc.

Plan now to attend newMedia2000 and get in touch with the digital world.

Co-Located with:

LINUX Canada
Conference and Exposition

To Register or for more information
www.newmedia.ca
1 (800) 331-5706

code 108

PlatinumPlus Sponsor: Adobe
Platinum Sponsor: NewTek
Silver Sponsor: Vistek

- Digital Audio Video Multimedia Broadcast Production • Digital Post • E-Commerce • Education & Training • Imaging & Design
- NewTek University • Peachpit Press Author Series • QuickTime Seminar Series • Web Production • Web Solutions
- XML Design & Implementation

©2000 Advanstar Expositions Canada, Ltd. All Rights Reserved.

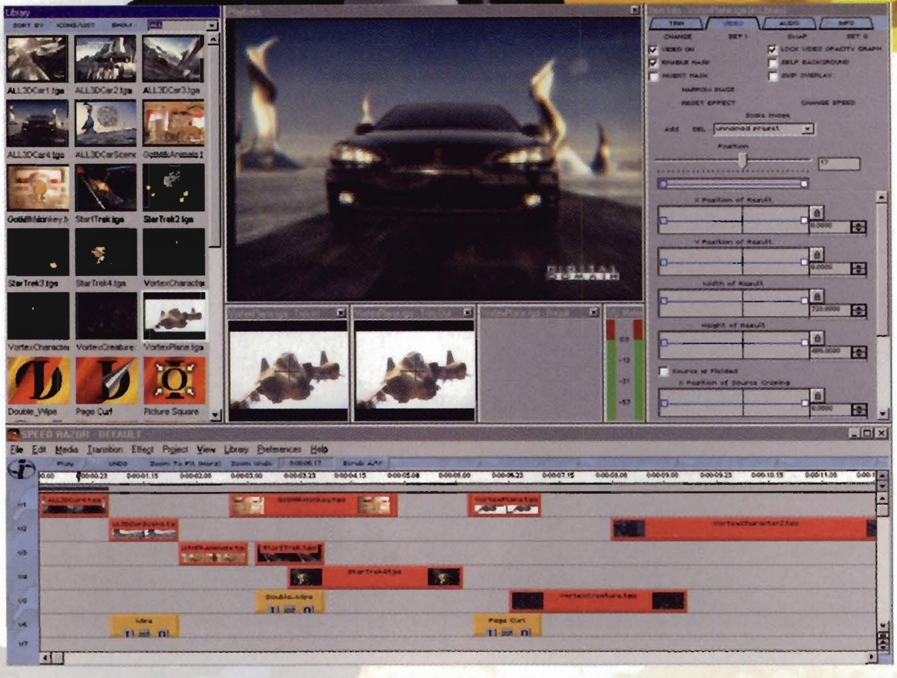
All right, you have chosen your processor; now it's time to pick a motherboard for it. The option you are most likely to want is dual processor support. Dual processor motherboards aren't that much more expensive than a single processor board considering that they offer the ability to significantly increase the horsepower of your system just by adding another processor. Even if you don't want to spend the money on a second processor at this time, the easy upgrade is nice to have in your hip pocket. Currently, no dual Athlon motherboards are produced; though they should be available later this year.

Your motherboard also contains slots for memory. You want at least 256 MB of memory for your new Toaster system. So, the more high capacity memory slots you have, the more memory you can add. Especially if you are using Aura (which you should - see Bohus's Aura article), more memory (512 megs or even 1 gig) will help your system run faster and smoother.

The number of PCI slots is also important, as your Video Toaster system needs three in just a basic configuration (Toaster, Sound, Disk Controller). Add a network card and/or a modem and the PCI slots are quickly sucked up. Some of the NewTek approved motherboards include onboard SCSI controllers. But unless you decide to use SCSI as your video storage method, it's probably an expensive feature you can do without.

A wide variety of graphics cards are on NewTek's tested and approved list. And by the time you are reading this in April, more will be added. When picking a video card, you want to be sure it will support ToasterVision and ToasterScope. NewTek, your dealer, or another user can recommend one that works with these two necessary programs. My current favorite is the Matrox G400 Max because it supports two monitors on the single AGP card and has 32 MB of memory. One of the only things I envied on those very expensive Avid systems was dual monitors. Now, with this card, I have a pair of 21" monitors displaying my editing in Speed Razor as well as my content creation in LightWave and Aura.

NewTek approved sound cards make up a very small list with a large difference in price. If you are a stickler for your audio quality and price is no object, the Antex Studio Card is the current top dog. But at almost $1000 with the breakout panel, it's not the cheapest solution by any means. The Ensoniq PCI 3D, also on the approved list, is about a $20 card. I personally have had good luck with the Ensoniq, but many would laugh at anyone using a $20 audio card with a $3000 editor. One of the key points in recording and playing back audio is to store the audio on a drive separate from the video. Though some have had success storing both audio and video on the same drives, having to read the audio and video files from the same drive may tax your system and cause problems that wouldn't normally occur.



One of the most innovative things about NewTek's New Video Toaster is that you aren't tied down to a single type of drive system. NewTek's previous nonlinear editor, the Amiga-based Flyer, was stuck with SCSI-2 Fast buses. As faster and more cost effective drive solutions became available, it wasn't possible to use them to their full capability with the Flyer. All that is behind us now with the New Video Toaster. The system requires 22 megabytes per second for each stream of uncompressed video - which is a lot of data for a hard drive to handle. The most cost effective hard drive solution at this point is created by drive striping a group of IDE drives hooked to a PCI IDE controller card.

What is drive striping? It is the ability in Windows NT (and Windows 2000) to format a group of drives (2-31) as a single large partition. Besides allowing you to create huge partitions, it substantially increases the speed at which you can access the partition. Therefore, in certain configurations, a striped group of fast IDE drives can read and write over 50 MB per second. (Since version 2.0 will offer dual stream, realtime effects, a very fast throughput such as 50 MB/S will be necessary. Again, exact specifications for dual stream are not available yet.

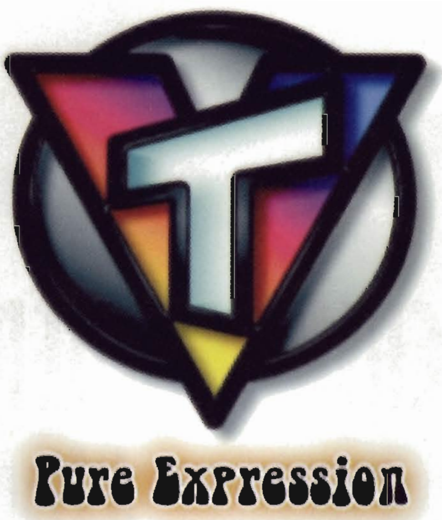
Last year at NAB, NewTek talked about IDE solutions that hold 1 hour of video costing $1000. This year the same $1000 will get you 2 hours or more of beautiful uncompressed video. Next time you see a review about the Video Toaster "only" having uncompressed video with a comment that uncompressed takes up too much space, figure out how much per hour it costs to use compressed video on the other system they are talking about. In many cases the compressed solution is costing as much if not more than NewTek's uncompressed solution with IDE drives. So if the price per minute of video is the same, why would you compress your video?

For die-hard SCSI fans, drive striping with a SCSI-Wide controller is the simplest SCSI option. Also, you can opt for the faster Ultra-Wide, LVD and Medea raid systems at higher price points. Properly configured, all of them will provide throughput as good if not better than the above IDE system. Right now, the SCSI-Wide advantage of 15 drives comes at a fairly big increase in cost.

One other thing to consider when putting your system together is some form of backup. The Video Toaster files can be huge, so back-

ing up hours of uncompressed video may not make sense to you, though several fast tape methods such as DAT and DDS are available. Personally, I only back up my Aura and LightWave creations. I will save the original video source tapes of anything I think I will need to rebuild at a later time.

I usually back up to CD-R's as the media is very cheap (less than $1 a blank CD). The drives themselves are very reasonable and a CD holds 650 MB or about 30 seconds of uncompressed video. Zip and Jazz drives are also options for backup; however, they are less permanent, and the media is more costly. Whether you decide to use tape, CDs or removable drives, you need some form of backup to keep copies of important files somewhere besides your hard drive.



During the time I have been writing this article, Microsoft has released the next version of its NT software named Windows 2000. The New Video Toaster has been tested and works under Windows 2000. However, the lack of Windows 2000 drivers for some products, such as video cards, make its use in your Video Toaster system a possible problem. If you decide to install Windows 2000 instead of Windows NT 4.0, be sure that Windows 2000 drivers are available for all the hardware you are planning to add to your system.

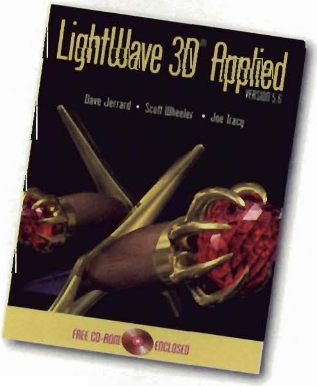
In closing I'd like to say that there are several authorized NewTek dealers who can configure a system for you and deliver a ready to edit computer to your doorstep. Besides your local dealer the VTNT list on onelist (a message to VTNT-subscribe@onelist.com will subscribe you) and NewTek's own www.videotoaster.com have a wealth of information about the working computer configurations for NewTek's latest video product. Safe Harbor also has built a very informative VTNT site, (http://dvguide.sharbor.com/toasternt/). Of course, *NewTekniques* will continue to cover the VTNT story. Starting next issue, we will begin regular tutorials about the features of the New Video Toaster. NT

Bill Evans is a developer of Flyer and Aura software and is looking forward to creating products for the New Video Toaster. You can email at litewave@bellsouth.net

LightWave 3D™ Applied Version 5.6

Written by industry-leading authors Dave Jerrard, Scott Wheeler and Joe Tracy

$49.95 with CD-ROM
Item #CADB700, Over 500 pages, softcover



Imagine a tutorial that has over 100 steps and more than 62 images, and that's just one chapter! The authors to LightWave 3D™ Applied, Version 5.6 understand that users learn best from step-by-step hands-on tutorials. With nine very detailed tutorial chapters, readers of LightWave 3D™ Applied, Version 5.6 will be able to build an entire medieval castle and onward to the Mercury Space Capsule. In addition, the authors have set up a specially designed web site that allows you access when you purchase the book to help answer any questions you may have.

With your purchase, you will receive a **FREE CD-ROM** containing materials featured in LightWave 3D™ Applied, Version 5.6 and extra objects, textures, and images.

Features Include:

- Nine step-by-step and hands-on tutorials.
- A special chapter for those who have never used LightWave 3D™ or Inspire 3D™ and want to get started.
- A special chapter on the secrets of a great demo tape and breaking into Hollywood as a LightWave 3D™ animator.
- A CD-ROM packed full of material from the book along with FREE bonus material!
- Insight from industry leading authors along with their tips and secrets to help you succeed.

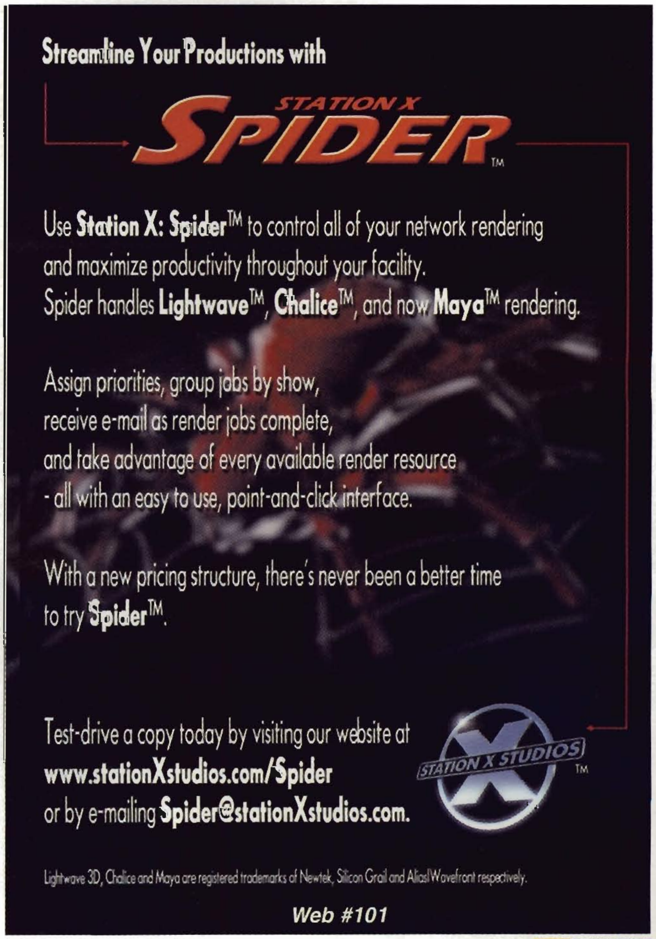
Table of Contents:

Chapter 1: Beginner Techniques: LightWave 3D™ and Inspire 3D™ Basics
Chapter 2: Tutorial: Planet Earth
Chapter 3: Tutorial: Building a Castle, Part 1
Chapter 4: Tutorial: Building a Castle, Part 2
Chapter 5: Tutorial: The Fountain in the Courtyard
Chapter 6: Tutorial: The Sword in the Stone
Chapter 7: Tutorial: Catch a Wave
Chapter 8: Tutorial: The Mercury
Chapter 9: Tutorial: The Mercury Parachute
Chapter 10: Tutorial: Landing at Sea
Chapter 11: Insight: Breaking Into Hollywood

ORDER TODAY!
1-800-598-6008
Outside the U.S. 218-723-9180
Fax 218-723-9146

Visit our web site:
www.advanstarbooks.com/lightwave/

Code: 95059Ar



Streamline Your Productions with

Use **Station X: Spider™** to control all of your network rendering and maximize productivity throughout your facility.
Spider handles **Lightwave™**, **Chalice™**, and now **Maya™** rendering.

Assign priorities, group jobs by show,
receive e-mail as render jobs complete,
and take advantage of every available render resource
- all with an easy to use, point-and-click interface.

With a new pricing structure, there's never been a better time to try **Spider™**.

Test-drive a copy today by visiting our website at
www.stationXstudios.com/Spider
or by e-mailing **Spider@stationXstudios.com.**

Lightwave 3D, Chalice and Maya are registered trademarks of Newtek, Silicon Grail and Alias|Wavefront respectively.

Web #101

A Free Flocking Plug-In for LightWave

this article has additional Online Content www.newtekniques.com/bonus

MARCHING ORDERS

A Flock of Ants

by Bob Hood

Have you ever watched a column of ants as they made their way across your kitchen countertop as you poured your morning coffee? The ability to endow your animations with realism comes from observing such details in the world around you — often before you obliterate them with a can of insecticide. An understanding of the mechanics of motion and the behavior that drives it is applicable to most any animation work you do, regardless of whether or not it is grounded in reality.

The Ants Go Marching

In the last issue, we used particle animation to simulate a tornado, but we also can use it to simulate insects. Animation that represents the motion of a group of animals or insects is known as "flocking." In flocking, the objects (or particles) involved all follow a common path to reach their destination, but they do not get there in exactly the same way. There is enough randomness to the movement of each entity to prevent the motion from being seen as pre-programmed and mechanical.

Though randomness does not govern all behaviors; certain items, such as the velocity of the entity, indeed will be driven by randomness. This prevents all entities from reaching the end of the path at the same time. However, some aspects of the programming have to address behaviors particular to the group being simulated. Ants, for example, occasionally will deviate individually from the communal path to explore other food source possibilities. Programming specific behaviors like this will help you convince the viewer to believe that they are actually seeing living creatures instead of inanimate flotsam.

Flock U.

An object with motion provides the path for the ants. The type of the object is irrelevant; its purpose is only to host the motion path the ants will follow. If the object itself will play no roll in your animation, then you should use a Null.

Each entity begins motion at a different frame offset. This disperses the group along the path. Ants do not travel in dense groupings, and the greater the range of initial dispersal you allow, the more dispersed the ants will be along the path.

To address the monotony that can arise when programming a crowd, I have chosen to employ a look-ahead mech-

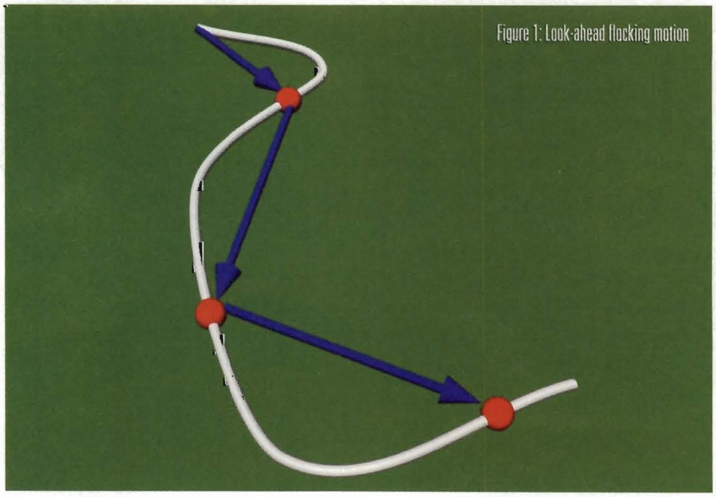


Figure 1: Look-ahead flocking motion

anism. In this method, each ant moves in segments along the path. Each of these segments represents the number of frames in advance of the current position that each ant will target.

Figure 1 illustrates this concept in exaggerated fashion. As you can see, the combination of look-ahead frames and the curvature of the path used can easily dictate the smoothness of the group's movement. The fewer look-ahead frames you use, the more closely your ants will follow the path.

If the factors dictate, some (or possibly all) ants will reach the end of the motion path before your animation is complete. The script has been designed to hold each ant at this endpoint motionless. If you need continuous motion, however, you could extend the script to continue each ant's goal-oriented motion once it has arrived at the end of the motion path.

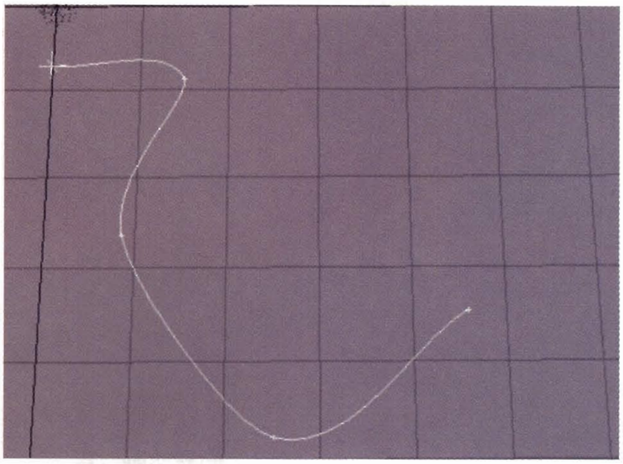
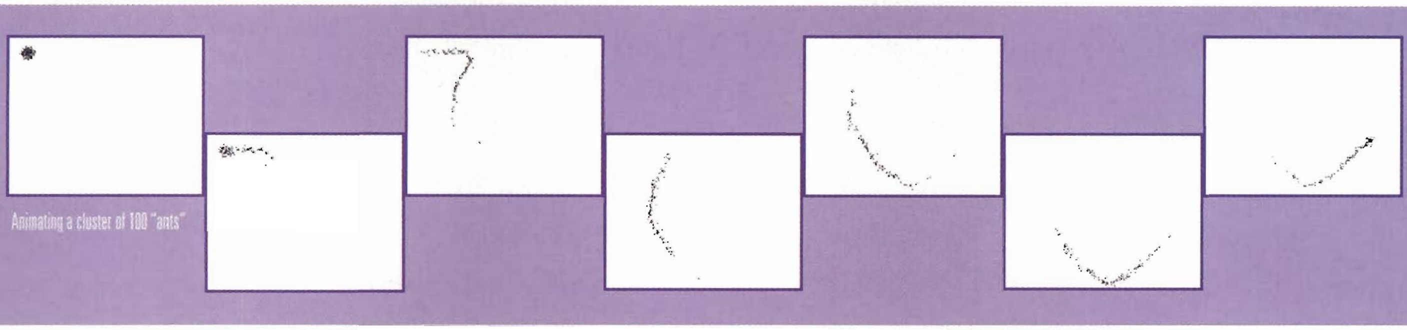


Figure 3: Null hosting flocking motion

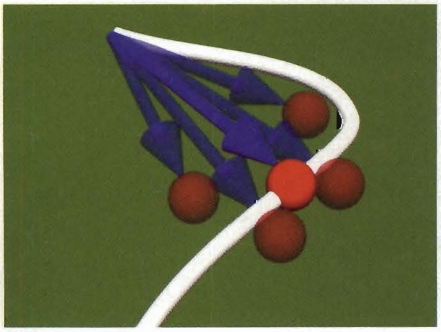


Animating a cluster of 100 "ants"

Deviant Behavior

If all the ants followed this basic formula, you would have little more than a simple flow of particles (Hey! What do you suppose we could do with that? =|^). In order to address the particular behavior of this type of entity, we have to allow for the possibility of deviation from the path. This deviation represents an individual ant's exploration of the area surrounding the path.

Figure 2: Deviating from the look-ahead frame



The simulation allows the user to specify deviation as a *potential*. This is expressed as a percentage (0% to 100%) of the whole. In other words, out of the total number of ants, what is the likelihood that an individual ant will deviate from the path to explore at each segment?

In order to implement this exploration, an ant first is tested for the likelihood of deviation. If it is to deviate from the path, its target point for the next segment is jittered a bit from its original location on the path. Smaller deviations will serve to break up the grouping of the ants in a lateral fashion (to the left or right of the path). Larger deviations, however, will make it appear as though the ant is investigating some alternate path.

Figure 2 shows this potential deviation. Each ant that deviates will "rejoin" the main group when it has reached its new goal. Additional realism could be achieved by having some of the remaining ants follow an ant that deviates too far (i.e., beyond some threshold) from the main body. The underlying motivation is that the lead ant likely would be on to something that others would find worthwhile.

An Ant...Can't

The simulation performed by this script is limited in a number of ways. Most notable would be that it assumes an unchanging value on the Y axis. The X/Z plane is assumed to be the "ground" upon which the ants travel, and all the behavioral calculations effect positions only along those axes. You could alter the Y values along the path, but the resulting deviations produced by the calculations will not be planar while the Y values fluctuate.

Figure 3 shows a scene with a single Null. This Null is using the same motion path found in Figures 1 and 2. This Null will serve as the host for the motion of our ants. The animation sequence in Figure 4 assigns the LS/DM script (Listing 1) to a cluster of 100 particles. The particles themselves have been slightly increased in size, and contrasting colors used, to make them more easily visible in the image sequence.

The sequence of this animation is 180 frames in length. The Null object reaches its endpoint by frame 60, but as I mentioned earlier, the Null and its movement are completely irrelevant to the animation. The settings used with the animation are a dispersal of 60 (frames), keyframes at every 5 (frames), low and high velocities in the range of 0.03 to 0.08 meters, respectively, a deviant potential of 30%, and a keyframe jitter of 0.05 meters. With the exception of the dispersal value of 60, these are the default settings for the script.

The script used to produce this simulation is available in the NewTekniques online-content area. If you are new to using scripts in LightWave, the online section also contains instructions on how to implement this script.

Bob Hood is a Senior Software Engineer at New at New Tek.
You can e-mail him at bob_hood@newtek.com

Blazing Aura

this article has additional
Online Content
www.newtekniques.com/bonus

LIGHTING THE FIRE

by Bohuš Blahut

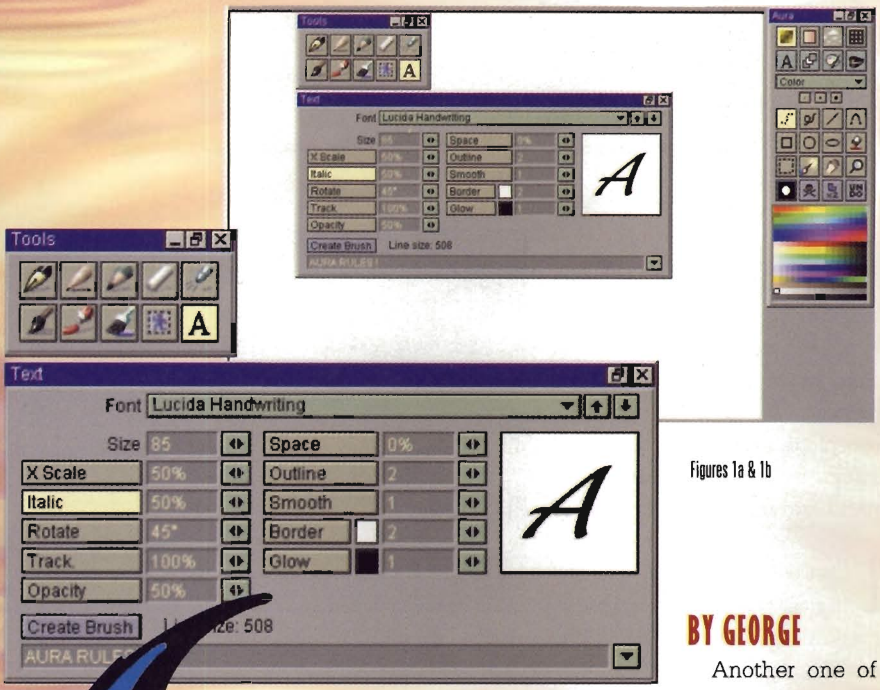
A year ago, I started writing for *NewTekniques*. During that time, I've written a column on the original Video Toaster and the Video Flyer editing system. While this is old hardware, I have always emphasized that all you need is imagination to be able to reproduce the kinds of visuals that you see every day on television. Sometimes you have to fudge things a bit here and there, but that's just the way it is, right?

Well, with Aura, the need for fudge has been relegated to late night snacks. Speed, slickness, no compromises - Aura delivers. The program with an Amiga pedigree has languished as NewTek's best kept secret for a couple of years now. But no more! This column is dedicated to exploring Aura's incredible power. And with the impending release of version 2.0 of Aura, we'll have a multitude of features to investigate.

The uninitiated may ask, "So exactly what is Aura?" When you first look at the software, you might think that Aura is a paint program. You are right. But after about five seconds of doodling with the different brushes, you realize Aura is a *really good* paint program. It is as if you're painting with real tools with all of the character and subtle nuances of actual paint and canvas.

But Aura is more than a 2D paint program; it is also a special effects engine. It can import lots of different frame and animation formats. And its multilayer timeline can let you do compositing, animation, and other time based functions. How about rotoscoping? Adding soft focus or glow to video? It can animate Photoshop filters - even Photoshop can't do that! Once done, you can save your output in a variety of formats.

The main thing to note is the speed, unprecedented speed...oh and yes, breathtaking speed. I am continually astonished at how anything less than an



Font Lucida Handwriting
Size 85
X Scale 50%
Italic 50%
Rotate 45°
Track 100%
Opacity 50%
Space 0%
Outline 2
Smooth 1
Border 2
Glow 1
Line size: 508
AURA RULES!

Figures 1a & 1b

eight processor graphics machine can produce results this quickly. Today's TV is all about multiple layers of action. Imagine having 10 layers that you can move around, experiment with, and modify quicker than you can read this sentence.

Aura's speed not only sluices more work through your studios it enables you to create those great effects that were either impossible or too time-consuming with other software.

For me, Aura also improves workflow tremendously. I like to experiment. With other packages, I would wait - sometimes several hours - for a render to complete, only to realize that I wanted to make a change. The consequence was that I had to simplify the type of graphics work that I provided.

To watch Aura slide through the progress-bar-boogie in seconds is compelling. Those of us who have been slogging through multi-layered graphics can rejoice at having the time and flexibility to explore and find new approaches. Aura is offering all of us the chance to experiment and, ultimately, to produce better work.

BY GEORGE

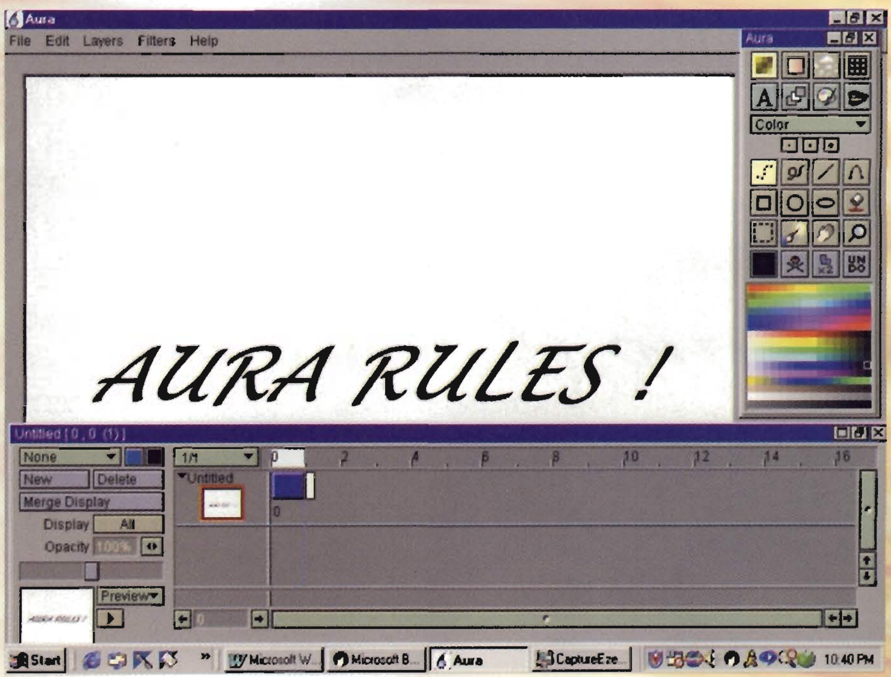
Another one of Aura's strengths is the ability to customize it. First, a little history is appropriate. Aura, in an earlier incarnation, was TV Paint, an Amiga program designed in France. A couple of years ago, NewTek acquired the program along with the development team. (NewTek actually offers the Amiga program, TV Paint 3.59, as a free download from the NewTek website.) Like many Amiga programs, Aura contains a built-in scripting language. Called "George," the language is in English; and if you know basic math, you know George.

Using George, third party developers have designed amazing plug-ins that offer astonishing abilities. One plug-in creates dazzling particle effects. With another, you can make artistically interactive volumetric lighting effects. You can do those things in LightWave, but they sometimes can take longer to set up. How about a plug-in that lets you import LightWave objects and fly them around? How about the same kind of flowcharting that the big boys using Flame and Inferno have?

If you have Aura, you should check out the superlative AuraFX available from Visual Inspirations. They have written awesome scripts for Aura that make creating transitions and text effects painless.

With all these features, Hollywood is discovering Aura. One of the demonstrations at NewTek Day in L.A. showed how Aura was making the ambitious Nascar cartoon possible and on budget. Its layering and chromakeying make cartoon onion skinning a snap.

Putting this kind of power in the hands



AURA RULES !

Figure 2

Blazing Aura

of the masses has always been Tim Jenison's aim. Once again, NewTek does not merely break down price barriers, NewTek tears the black heart out of high prices and brandishes it before it dies.

Take up your arms, the revolution is here.

DIFFERENT STROKES FO DIFFERENT FOLKS

To give you a glimpse of Aura's outstanding features, I will introduce you to the innovative and flexible Stroke Recorder. Have you ever had a client ask if you could animate his signature and you spent hours in LightWave attempting to model a smooth script? If you have, the Stroke Recorder is worth the price of admission to Aura.

The Stroke Recorder records any drawing that you perform with your mouse or tablet. It then applies that drawing motion as an animation over a series of frames. It is easier to show you how it works than to try to explain it. So, let's create the battle cry for this article. *Aura Rules!*

First, we will compose some text in a background layer in Aura. We then will trace around this text using the stroke recorder. By giving ourselves a template, we can give our stroke recorded art a neat, yet hand drawn, appearance.

1. First choose a font for our rallying call. When you compose it, think about how you want it to reveal in the animation. (Figures 1A & B)

2. Click the [Layers Control] icon. Aura will load the template image that we will be tracing into the first layer. (Figure 2)

3. Hit the [New] button in the Layers Panel. This will create a fresh layer on top of the template image.

4. Choose a suitable tool from the Drawing toolbox. I used the [Pencil] since it gives a nice slim line that helps envision what the Stroke Recorder will be recording.

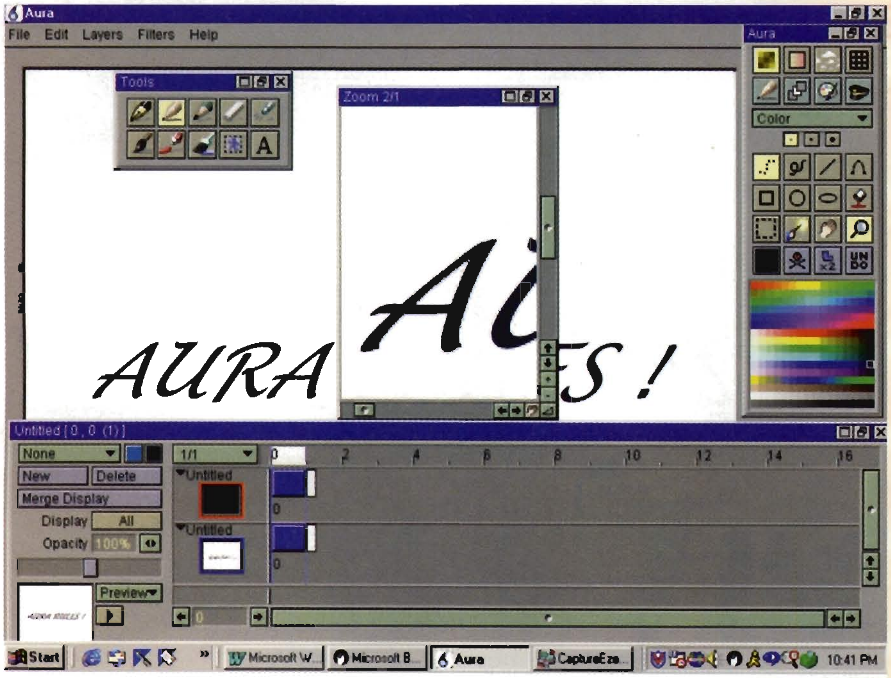
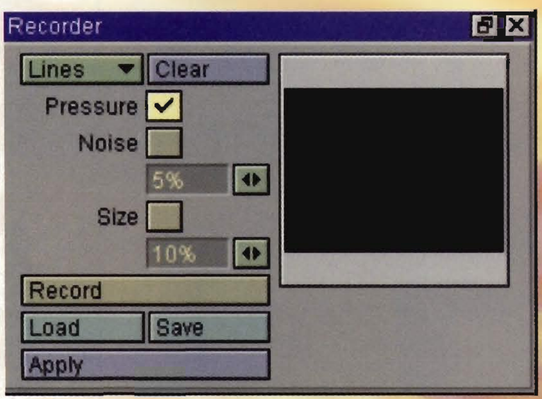

Aura
File Edit Layers Filters Help
Tools
Zoom 2/1
AURA RULES!
Color
Untitled [0, 0 (1)]
None
New Delete
Merge Display
Display All
Opacity 100%
Preview
1/1
Untitled
Untitled
0 2 4 6 8 10 12 14 16
Start
Microsoft W...
Microsoft B...
Aura
CaptureEze...
10:41 PM

Figure 3


Recorder
Lines
Clear
Record
Load
Save
Apply

Pressure ☑
Noise ☐ 5%
Size ☐ 10%

Figure 4

5. It is a good idea to magnify the area that you'll be painting by using the [Magnifying Glass] tool. I magnified it so that I could see one letter at a time. You can use Magnify's window gadgets to move around the magnified area. (Figure 3)

6. Go to "Filters/Animated/Stroke Recorder." This will open the Stroke Recorder's window. (Figure 4)

7. We don't need to adjust anything in this window. Just click on the [Record] button, and the Stroke Recorder will capture everything that you draw.

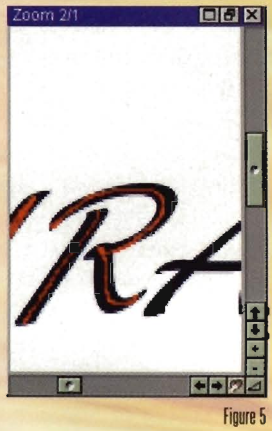


Figure 5

8. Start scribbling over the letters of your template. I used red to do my drawing. The red pencil line stood out nicely from the black text in the template image. Don't worry about which color you choose, it won't affect any of the work that we do in the stroke

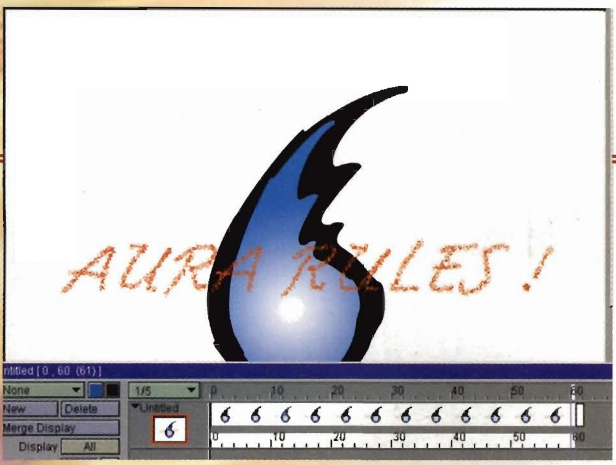


Figure 6

recorder later. (Figure 5)

9. Once you have finished tracing over the letters, click on [Record] again in the Stroke Recorder. This toggles it off.

10. In the Stroke Recorder panel, [Save] this recording for safety. I called it Aura.ask.

You may not feel it yet, but you've just created the basis for an animation! Now, we will create an entirely new project. We will set up a 60 frame animation and apply the stroke recorded information on top of a background. Voila! Animation!

11. In the upper left of the Layers Panel, click on the [Delete] button twice to clear out the two layers that we were using before.

12. Either load up a picture or select a solid colored background. A quick way to create a solid white background is to click on white from your working palette, click the [Fill] icon, and then click on your canvas - instant white background. I have imported the Aura logo into this layer.

13. In the Layer Panel's Timeline, click the white handle to the right of the current layer's thumbnail preview. Pull it to the right for 60 frames.

14. Use the mouse's right button to click on the stretched out timeline. Choose "Make Anim" from the menu.

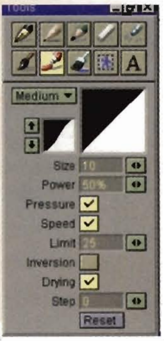
15. Again, right click on the timeline to select "Select All." Now the background with our Aura logo is ready to receive the Stroke Recorded information.

16. Choose the brush tool and the palette color that you'd like Aura to use to draw out the animation. I chose red with the [Chalk] tool at its default settings.

17. In the Stroke Recorder's window, click on [Apply]. You will now see Aura play back the Stroke Recorded data and apply it frame by frame to the animation. (Figure 6)

18. Click on the [Preview] pulldown in the Layers panel and select [Make]. Now, sigh deeply with a sense of accomplishment. Think back wistfully to the hours you once spent trying to create this effect without Aura. OK, figure out what to charge your client for this 15 minutes of work.

You're done! If you're not happy with the chalk tool's look, simply hit [U] to undo and select another tool. Some of the other tools like Watercolor and Airbrush offer interesting effects when you monkey with their settings. I picked [Oil Paint] with a Size setting of 10, and Drying turned on. (Figure 7 & 8)



Medium

Size 10

Power 50%

Pressure ☑

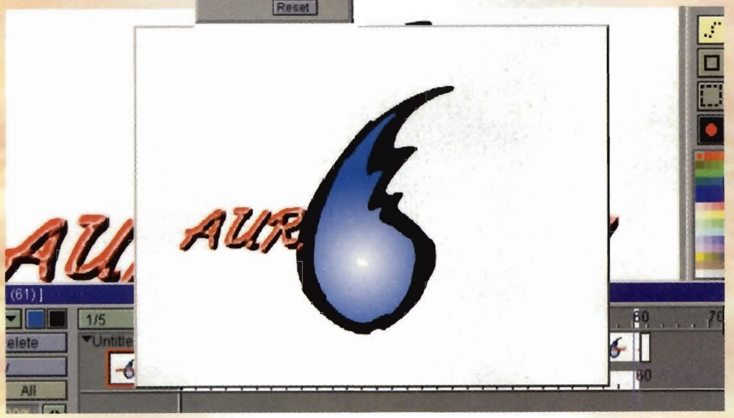
Speed ☑

Limit 25

Inversion ☐

Drying ☑

Step 0



Figures 7 & 8

If you want to finesse the timing of your drawing, the Stroke Recorder also records any drawing that you do in the gray workspace that surrounds your canvas. To add pauses between the drawing of the individual letters, when you complete a letter, scribble a little in the non-canvas workspace. The Stroke Recorder will remember that and put appropriate pauses into your animation. I did this in the "Aura Rules" animation before the exclamation mark draws itself out.

You also can easily make the animation hold on the last frame. Once your animation is finished rendering to the timeline, stretch out the timeline by the number of frames that you want to hold the animation. When Aura asks whether you want Time Stretching, click [No]. This will copy the last frame for the length of the new timeline. (Figure 9)

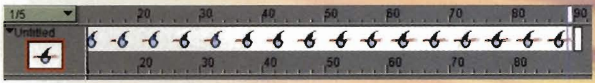


Figure 9

Also, if you are incorporating this animation into a larger project, you should place it in its own layer. Then you can move it around and apply image processing effects to it without affecting the other layers.

That is it for this inaugural column. If you have topics that you want covered, email me. Your ideas will breed more ideas. And if you are creating wondrous Aura projects, please, drop me a line. If you have great images, we can exhibit them in the *NewTekniques Gallery online*.

Bohus Blahut is the director of The Vantage Point and the creator of the Catalyzer tutorial video series. You can email him at bohus@xnet.com

this article has additional Online Content www.newtekniques.com/bonus

LIGHTWAVE FUNDAMENTALS

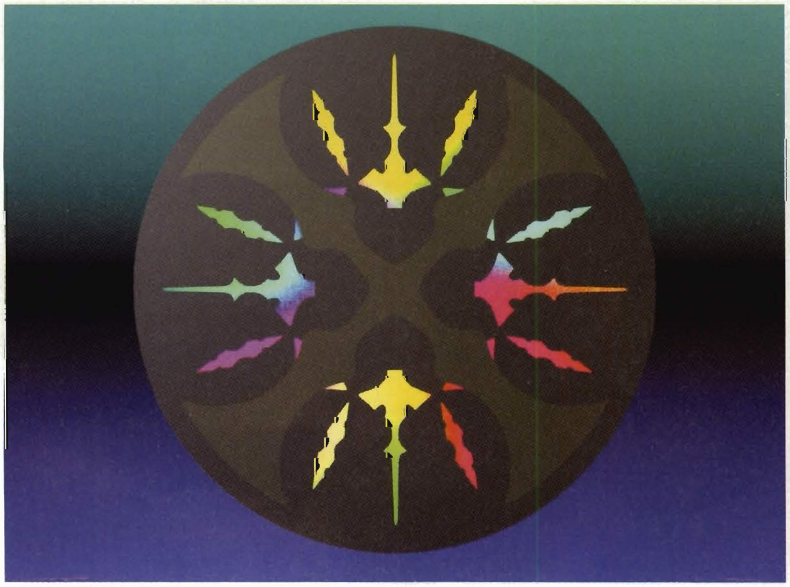
The Light at the End of the Tunnel

A Kaleidoscopic Primer

by
Jared Brooks

Jared Brookes guides you through the construction of a deceptively simple colored light. The tutorial may be *Fundamental*; but if you apply his concepts, with a little tinkering, you could build a psychedelic kaleidoscope below or make a cool rotating light for your virtual dance floor.

In this tutorial, we will construct a rather unique type of "light," using functions like Points, Curves, Drill, and Clone. You'll be creating a number of symmetrical patterns. Feel free to go back and add or adjust the resulting patterns to your taste. The scene and object files have been provided in the on-line bonus section.



1. Start LightWave Modeler up. Choose [File] and [Clear] to create a fresh Modeler environment. Click on the [Display] tab. Next, choose [Options] and make sure that the Unit System is set to [Metric] and Grid Snap is set to [Standard]. Click [Ok] to accept.

Click on the [Points] button at the bottom of the screen to make sure that we're in point selection mode.

Take a look at the grey indicator at the bottom left corner of the screen. This will tell you where your pointer is located on the grid.

I want to get you to the proper section of the Modeler workspace for what we're about to build:

Start by pressing [a] to set the grid scale to 50 cm. Then tap [Shift] [.] twice.

We want the center of the screen to be at X: 0 m, Y: 10 cm. To do this, place the pointer at X: 0 m, Y: 10 cm in the Face view, and press [g] to go to that position. Then tap [1] on the numeric keypad (on the right side of the keyboard), to fill the screen with the Face view. Follow this by pressing [Shift] [.] two more times. That should do it!

Now we're going to place a series of points. Two things to keep in mind:

1) If you make a mistake, you can always press [u] for Undo.

2) To see more of the grid, simply place the pointer near a section that you want to see more of, and press [g] to go to that position. [g] centers around the pointer.

Select [Polygon] to show the options for the Polygon tab, and choose [Points].

Using Figure 1 as a guide, in the Face View, use the Right Mouse Button to click points down in the following locations (you don't have to create a pattern exactly like Figure 1. Feel free to customize it — just be sure not to cross the Y-axis):

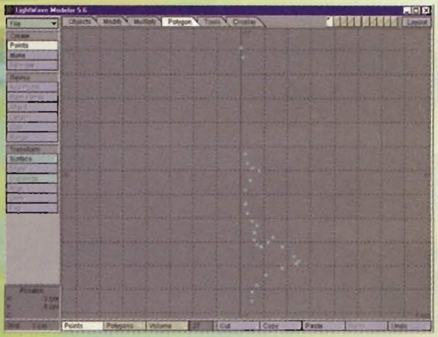


Figure 1

X	Y	X	Y
0 m	16.1 cm	7 mm	7.9 cm
1 mm	15.7 cm	9 mm	7.8 cm
2 mm	11.7 cm	1.2 cm	8 cm
3 mm	11.3 cm	1.4 cm	8.2 cm
5 mm	11.1 cm	1.8 cm	7.8 cm
8 mm	11 cm	2.3 cm	7.4 cm
4 mm	10.6 cm	2.5 cm	7.2 cm
2 mm	10.2 cm	2.4 cm	7.1 cm
2 mm	9.6 cm	1.8 cm	6.9 cm
3 mm	9.2 cm	1.1 cm	6.6 cm
5 mm	8.9 cm	7 mm	6.2 cm
7 mm	8.7 cm	5 mm	5.9 cm
6 mm	8.4 cm	5 mm	5.5 cm
6 mm	8.1 cm		

Great. Now select [Multiply] [Mirror], and click on the Y-axis in the Face view. Pressing [Enter] should yield a result like Figure 2.

Click on [Mirror] again, to exit Mirror mode, and tap [/] to deselect the points.

Since the top point was right on the Y-axis line, we now have two points overlapping one another. This is a modeling and rendering problem waiting to happen. Let's eliminate the extra point by choosing [Tools] [Merge], or press [m]. Select "Automatic," and click [Ok]. You should see an indicator pop up that reads, "1 point eliminated."

Now, starting with the top point pattern, select the points in order in a clockwise direction, until all of them are highlighted. When done, press [p] to connect them into a polygon. You should see something like Figure 3.

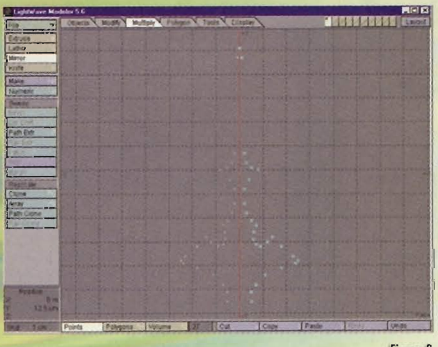


Figure 2

2. Now for our next pattern...

Click on the top of the layer 2 button, or press [2] on the keyboard.

With the pointer in the Face view, tap the up arrow twice, followed by [Shift] [.]. This will slide our viewing area up a bit and zoom us in to a grid value of 1 mm.

As before, select [Polygon] [Points], and click down a series of points, using the data below as a guide:

X	Y	X	Y
400 um	14.68 cm	4.9 mm	12.96 cm
3.4 mm	13.52 cm	6 mm	12.26 cm
2.6 mm	13.4 cm	4.8 mm	12.12 cm
2.4 mm	13.24 cm	3.6 mm	11.84 cm
2.6 mm	13.06 cm	3 mm	11.64 cm
3.4 mm	12.98 cm		

Again, select [Multiply] [Mirror], and click on the Y-axis in the Face view. Press [Enter] to execute the mirror instruction. Next, deselect all [/], place the Mirror bisecting line at the horizontal position of Y: 11.5 cm. (Note: if the mouse is positioned too close to the X: 0 position, the line will snap to that spot and bisect vertically. You need to move your mouse away from X: 0 to create a horizontal line.) Press [Enter] again, and [a].

Click on [Mirror] again, to exit Mirror mode. Since there were no points on the bisecting lines, we don't have to do a merge this time.

Select the points in a clockwise order, and press [p] to make a polygon.

3. Now, for each of the objects that we've created, we need to make additional copies that point in a total of eight directions each. In order to do this, we'll be making use of the clone feature.

We'll start with the object that we just made.

Press [4] on the numeric pad to bring us back to quad view.

Next, choose [Multiply] [Clone], and give it the following settings:

Number of Clones __7

Rotation: __________X: 0 Y: 0 Z: 45

Leave all other parameters at their defaults, and click [Ok].

Press [a] to scale the objects into view. You should see a star-like pattern.

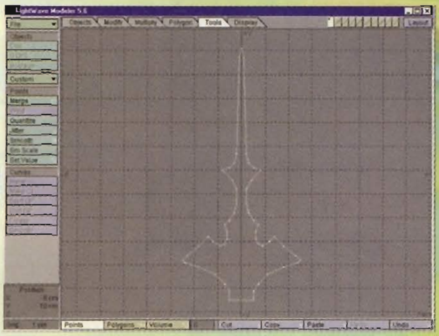


Figure 3

Next, click on the top of the layer 1 button; we'll do the same thing for this object.

Click on [Clone] again, and use the same settings as before. Figure 4 shows the resulting pattern.

4. If you click on the lower half of the layer 2 button, you'll see the second pattern in the background. Currently, the two patterns are overlapping. To solve this, let's rotate the first pattern one-half of 45 degrees.

Select [Modify] [Rotate], and press [n]. Then use:

Axis __________Z

Angle __________22.5 degrees

Center ________0 m, 0 m, 0 m

[Ok]

Click on [Rotate] again to exit rotation mode.

Finally, hold [Shift] and click on the top of the layer 2 button, bringing both objects into the foreground. Press [x] to cut them, and [v] to paste them down as one element in the first layer.

You should see something like Figure 5. Although this isn't one of the final objects, you still might want to save a copy of it to a directory called "LayerLight," in the "Newtek/Objects/" directory. I named it "StarPattern.lwo."

5. We'll be using these flat polygons to cut through a larger circular polygon. Let's make that one now.

Click on the top of the (now empty) layer 2

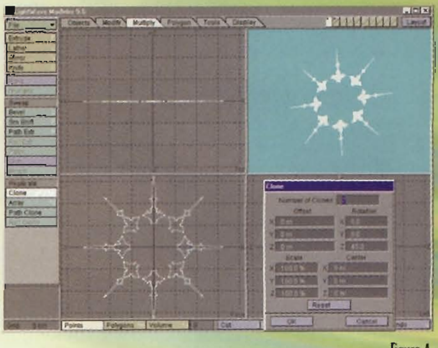


Figure 4

TO ORDER CALL 800-544-6599
MONDAY-FRIDAY 9-6, CST
INFORMATION 262-548-8620 • FAX 262-548-8130
TECH SUPPORT/RMAs 262-548-8159 • 12-4 PM, Mon-Fri.

WE NEVER CLOSE

VISIT OUR Internet site www.sharbor.com

Shop our secure online store for a bigger selection and more information about each product at www.sharbor.com

Safe Harbor Computers -

Your #1 Source for Digital Video, 3D Animation, and Multimedia Products.

A Safe Harbor Exclusive!

Shave And A Haircut

Brand new from Joe Alter, who wrote ILM's first hair renderer 6 years ago. Features include Shadowing, Motion Blur, Collision Detection, and Seamless Integration..........................**95.00**

A Safe Harbor Exclusive!

Vue d' Esprit 3 –

This powerful 3D application is optimized for creating, rendering and animating natural scenery. **Vue d' Esprit 3** was designed for the beginner, as well as the advanced user. It is fast, easy to use, and includes many new features, such as animation, elaborate timeline, and professional video options. Also, fully textured objects created with LightWave 3D can now be imported and exported easily......**189.00**

DarkTree Textures

A powerful next-generation system for designing your own static or animated procedural textures, that delivers stunning special effects, intense realism, and bizarre abstractions. The stand alone application renders procedurally generated texture maps, or plug shaders straight into LightWave, Animation Master, 3D Studio Max and trueSpace **289.00**

DarkTree Simbiont for Animation Master......................**55.00**
DarkTree Simbiont trueSpace......**64.00**

Genesis V2 Pro

A collection of high-end visual effects. **Genesis V2 Pro** gives you complete and infinite control over any kind of optical image you can create. Works with LightWave 5.x or Inspire 3D **295.00**

Free upgrade to LW [6] from Future Fantastic!

dpsReality

The world's first Studio Digital Disk Recorder! Features compressed or uncompressed recording, alpha channel, balanced/unbalanced stereo audio I/O and DPS Virtual Tape File System for group rendering. The package contains the dpsReality player application, Digital Fusion DFX compositing software, and an audio/video breakout cable.......................**2249.00**

dpsVelocity – 2D

The combination of hardware and software is what makes this real-time NLE system the ultimate choice. The **dpsVelocity – 2D** delivers faster, sharper, and easier edits at an affordable price. This real-time editing solution includes the dpsReality card, dpsReality player, audio/video breakout box cable, dpsVelocity NLE software, and so much more ....**Call**

dpsVelocity – 3D..........................**Call**

DPS™

Visit our new site **dvguide.sharbor.com/dps/** to build your own, complete, quality turnkey workstations.

DVRex-M1

Canopus DVRex-M1/Premiere -
A high-performance digital video and audio editing system. The DVRex combines high-quality DV video with multi-channel audio support. This complete system comes with Adobe Premiere 5.1, Kick Start Training CD, breakout box, Rex Edit 2.5, and all the necessary cables...........................**2399.00**

Canopus Rex RT Option -
Add real-time effects to your DVRex editing system!...**999.00**

DVRaptor -
A complete DV camcorder editor which includes Adobe Premiere 5.1, Kick Start Training CD, and all required cables **549.00**

Mega Production Bundle -
Includes DVRex-M1 breakout box, RexRT option, Rex Edit 2.7, Adobe Premiere 5.1, Rex navigator software, and all necessary cables.................................. ....**2999.99**

HARDDRIVES/STORAGE

Guaranteed Low Prices!

Seagate

IBM 20GB Ultra ATA 66	
Seagate ST39173N 9.1GB Barracuda	Ca
Seagate ST39175LW 9.1GB Barracuda	Call
Seagate ST39103LW 9.1GB Cheetah	Call
Seagate ST318275 LW 18GB Barracuda	Call
Seagate ST318203LW 18.2GB Cheetah	Call
Seagate ST136475LW 36GB Ultra2 Barracuda	Call
Seagate ST136403LW 36GB Ultra2 Cheetah	Call
Seagate ST150176LC 50GB Ultra2 Barracuda	Call

Fiber Factory 3 – New anti-aliased fibers look as good as they are fast! Create all types of photorealistic hair, fur and fibers without using a ton of memory. Improved dynamics give your hair and fur creations realistic motion, such as, inertia, gravity, and wind effects. Fiber models can also be color mapped or individually mapped for color tips or root effects. Works with LW 5.6 and [6]........................**Call**

Sparks2.................................. ....**Call**

3Dlabs

Oxygen GVX1- AGP

A 100% geometry and lighting acceleration card which integrates the GLINT R3, and the GLINT Gamma G1 processor on a single AGP board **699.00**

Oxygen GVX1 - PCI **899.00**

Oxygen GVX210 AGP – Delivers high-end geometry and rasterization graphics acceleration on a single AGP board..............**1349.00**

Oxygen VX1 AGP – Achieve 2D and 3D superb graphics with the GLINT R3 processor............**219.00**

Oxygen VX1 PCI **219.00**

ORDER SECURELY ON-LINE • www.sharbor.com

THE JOY OF SIX!

LightWave [6]

The new version of the award-winning 3D animation system from NewTek! Powerful new tools include enhanced interactivity and scene editor, Skelegons, MetaNURBS in layout with point weighting, caustics, UV Mapping, surface editing in modeler and a whole lot more! (specifications subject to change without notice) LightWave 3D is the most-used animation system on the planet! What are **you** using? **2250.00**

www.joyofsix.com *for more information.*

LightWave [6] Upgrades	**Call**
Aura 2.0	**895.00**
Aura 1.0 - 2.0 Upgrade	**295.00**
Calibar	**Call**
Hypervoxels 2.0	**249.00**
Inspire 3D/LD_Tools Bundle	**449.00**
Inspire 3D Upgrades	**Call**

NewTek

Video Toaster NT

Never again compromise the quality of your video - lossless video editing is now available on your desktop! Introducing Video Toaster NT - the next generation, uncompressed digital video solution from NewTek. For only $2995, your complete post-production studio includes:

- Speed Razor (award-winning non-linear editing)
- Aura (2D graphics, manipulation & compositing)
- Lightwave (professional 3D animation)

Already own a Video Toaster, Flyer or Lightwave? Save $500 when you upgrade to the Video Toaster NT!

Complete reliable, quality turnkey Toaster workstations are also available!

Video Toaster NT SDI Option........995.00

Safe Harbor Computers is proud to be Newtek's largest volume direct dealer in the U.S.

Visit our website

www.videotoasternt.com

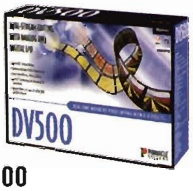
DC1000

The DC1000 is a complete, frame accurate video editing solution using state-of-the-art real time dual stream MPEG-2 technology. DC1000 is bundled with Premiere RT5.1, TitleDeko, ACID Music, and Minerva Impression CD-Pro video authoring. It is designed for videotape, CD-ROM, and Internet video production. The DC1000 can be upgraded to DVD1000. ....**1899.00**

DV Option for DC1000 -

Record and edit MPEG-2 video. Use captured video in LightWave and record your own animation back to tape...**999.00**

DC1000/DV Option Bundle.....2699.00



DV500

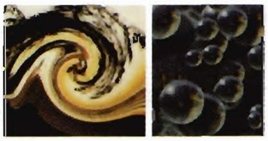
Output to DV or analog videotape, or post your video to the web, to CD-ROM or to DVD. The DV500 comes bundled with Adobe Premiere RT 5.1, TitleDeko Character Generator, Pixelan software's Video Spice Rack, FreeFX, ACID Music, and Minerva Impression **899.00**

DC30 Pro	**599.00**
DC50	**1389.00**
DV200	**399.00**
DV300	**599.00**

PINNACLE SYSTEMS

For complete workstation configurations and much more information, check out

dvguide.sharbor.com/dc1000/

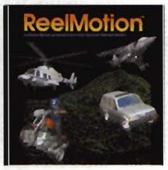


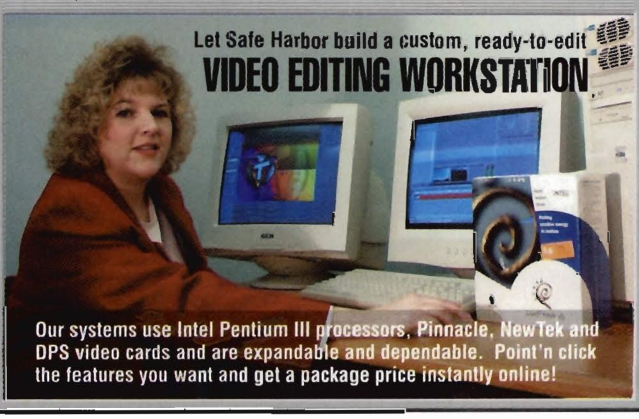
Video Toaster NT Software Bundle **399.99**

AURA

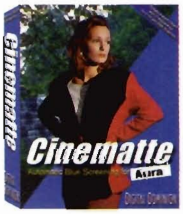
Visual Inspirations

ReelMotion 1.0 – A stand alone program on CD. Can be used with any animation program that supports Biovision or Acclaim motion capture file formats. **ReelMotion** is a realtime simulator that uses physics and collision detection to create realistic animations of objects and vehicles including cars, aircraft, motorcycles, helicopters and nearly any rigid body object **634.99**





Let Safe Harbor build a custom, ready-to-edit
VIDEO EDITING WORKSTATION
Our systems use Intel Pentium III processors, Pinnacle, NewTek and DPS video cards and are expandable and dependable. Point'n click the features you want and get a package price instantly online!



NEW!

Cinematte for Aura

New plug-in for Aura! The acclaimed blue screening tool that allows you to composite images together while maintaining proper anti-aliasing and transparency is now available!. Works with Aura 1.0 and 2.0................**245.00**

Safe Harbor is dedicated to providing quality digital video, animation and multimedia products, technical expertise, and courteous, personalized service to our customers to maintain our impeccable reputation and total customer satisfaction.

NATUREFX
WATER.SKY.CLOUDS.WAKES

NatureFX allows you to create tides in stormy seas, realistic ripple effects, and haze that changes color depending on the angle of the source. NatureFX can also create 2D and 3D rainbows that show through haze **699.00**

Impact 2	**Call**
Particle Storm 2.0	**489.00**
Particle Storm SE (for LW [6]	**399.00**
Lume Tools Complete Set	**649.99**
Tree Druid	**169.00**

The LightWave 3D Plug-in Experts for Intel, Mac, and DEC!

Dynamic Realities

Terms: POs accepted from schools and government agencies • No waiting for personal or business checks • Defective products replaced promptly. RMA number required (call 262-548-8159) for all merchandise returns. Returns not accepted after 15 days. Returned products must be in original packaging, postage prepaid. Opened software not returnable. Shipping charges not refundable. Returns subject to a 15% restocking fee • Not responsible for typos. Prices subject to change.

SAFE HARBOR COMPUTERS

W226 N900 EASTMOUND DR., WAUKESHA, WI 53186

Web #107

button, and select [Objects] [Disc] [Numeric], and use the following data:

Sides __________80
Segments ______1
Bottom ________0 m
Top ___________0 m
Axis __________Z
Center ________0 m, 0 m, 0 m
Radii __________18 cm, 18 cm, 0 m
[Ok]

Press [Enter] to make the object, and click on [Disc] again.

Now for the cool part!

Click on the bottom of the layer 1 button, and choose [Tools] [Drill]. Set "Axis" to "Z" and "Operation" to "Tunnel." Select [Ok], and behold Figure 6.

Press [q], give the object the surface name "Star Plate," save it as "StarPlate.lwo."

You could continue to add more drilled details to the disc object (as can be seen in the introductory image for this tutorial). Or, for now, you can move on to the next step.

6. The object that we just created will be slowly rotating over a brightly colored background. I'd like to add another rotating element on top of the first one. Switch to layer 3.

We'll start by clicking on [Objects] [Disc] [Numeric]. Since I want this object to be slightly in 'front' of "StarPlate.lwo," we'll use slight offset values for Bottom, Top, and Z Center.

Try these values:

Sides __________80
Segments ______1
Bottom ________-1 mm
Top ___________-1 mm
Axis __________Z

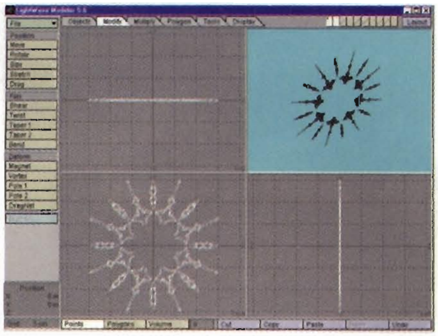


Figure 5

Center ________0 m, 0 m, -1 mm
Radii __________16.5 cm, 16.5 cm, 0 m
[Ok]

Press [Enter] and click on [Disc].

This object won't remain a disc for long. We'll be drilling a pattern out of this one as well. On with the negative space madness...

7. Switch to layer 4, and place layer 3 in the background.

Press [1] on the keypad to enlarge the Face view again. Place the pointer at X: 6 cm Y: 8 cm, and press [g]. Then zoom in a bit, by pressing [Shift] [.]

Select [Polygon] [Points] and place the following:

X	Y
8 cm	16 cm
5 cm	15.6 cm
3 cm	14.2 cm
1.6 cm	12.2 cm
1.2 cm	10 cm
1.4 cm	8 cm
2.2 cm	6.2 cm
1.2 cm	5 cm
6 mm	4 cm
8 mm	2.6 cm
1.2 cm	1.2 cm

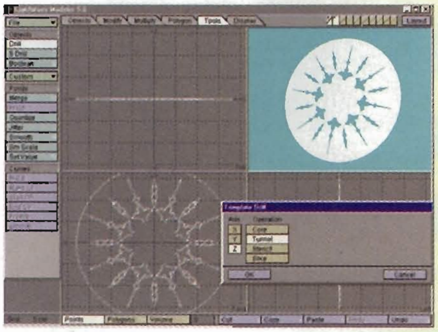


Figure 6

Click on the [Points] button again.

8. For efficiency's sake, let's use the clone feature to copy, rotate, and flip the points in one swift motion.

Select [Multiply] [Clone] and use the following settings:

Number of Clones1
Offset _______0 m, 0 m, 0 m
Rotation _____0.0, 0.0, 90.0 degrees
Scale ________X: -100% Y: 100% Z:100%
Center _______0 m, 0 m, 0 m
Click [Ok]

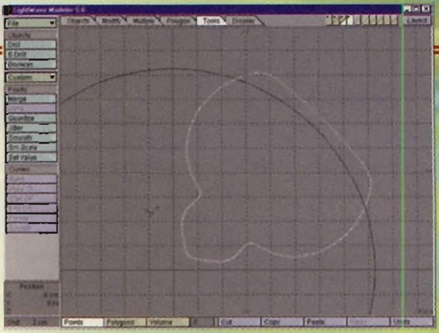


Figure 7

The point pattern was copied once by the clone function, then rotated 90 degrees. Finally, the negative Scale value flipped the pattern across the X-axis. Nifty! Finish this off by selecting [Tools] [Merge], and choose Automatic.

9. In order to create a smooth shape, select all of the points in a clockwise order, and press [Ctrl] [o] to make a closed curve. Then click on [Freeze] to turn it into a polygon like the one in Figure 7. (Notice that, in this process, extra points have been added to the polygon.)

This object needs to be duplicated. Select [Multiply] [Clone], and use:

Number of Clones 3
Offset _______0 m, 0 m, 0 m
Rotation _____0.0, 0.0, 90.0 degrees
Scale________X: 100 % Y: 100 % Z: 100 %
Center _______0 m, 0 m, 0 m
[Ok]

10. Press ['] to swap layers 3 and 4, so that layer 3 is now the foreground.

Cut the pattern out of the disc, by clicking on [Tools] [Drill]. The settings should be as they were before. This is what we want, so click [Ok].

Press [q], and give this object the surface name "Cross Plate," and save it as "CrossPlate.lwo."

11. Now for the last (and simplest) object. Switch to layer 5.

Choose [Objects] [Disc], press [n] and use:

Sides __________80
Segments ______1
Axis __________Z
Bottom ________1 mm
Top ___________1 mm
Center ________0 m, 0 m, 1 mm

Radii __________17.2 cm, 17.2 cm, 0 m

[Ok] and [Enter] to make the disc.

Name the surface "Color Disc," and save the object as "ColorDisc.lwo."

12. Now we'll set up the scene.

Load Layout, and select the [Options] button to open the Options panel. Make sure that [Auto Key Adjust], [Auto Key Create], and [Left Mouse Button Item Select] are off. Click [Close Panel]. Then, set Last Frame to 60 in the panel at the bottom right.

Next, open the [Objects] panel, select [Load Object] and double-click on "ColorDisc.lwo" to load it. Do the same for "Starplate.lwo" and "CrossPlate.lwo." [Close] the Objects panel.

Change the view to "Camera View." Select [Camera] from the [Edit] menu. Make sure that [Move] is highlighted in the Mouse menu, press [n], and Move the camera to: X: 0 m Y: 0 m Z: -65 cm. [OK] Your Layout view should look like Figure 8. To create a keyframe at 0, press [Enter] twice.

Because of the offsets used when creating the discs, "ColorDisc.lwo" is farthest from the camera, and "CrossPlate.lwo" is closest.

13. The next step is to rotate "CrossPlate.lwo." (If the item "CrossPlate.lwo" is not selected, choose it from the pulldown list.)

Press [f] and type 60 and [Enter] to take us to frame 60. Select [Objects] from the Edit panel, and [Rotate] from the Mouse menu. Press [n] and use: H: 0 P: 0 B: 90.00 degrees. [OK] Press [Enter] twice to create a motion key for "CrossPlate.lwo."

Change the Selected Item to "StarPlate.lwo." Click on [Rotate] and set its Bank value to 45.00 degrees. [OK] Again, press [Enter] twice to keyframe it at the current frame of 60.

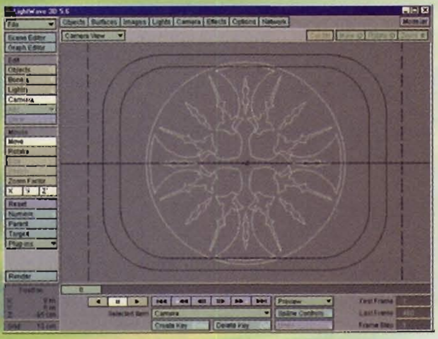


Figure 8

Since the final animation will be a repeating anim, there's no need to animate a full 360 or 720 degrees of rotation, since the patterns repeat after one-quarter of a rotation.

14. Surfacing:

For "ColorDisc.lwo," I put together an image in a paint program (Figure 9). Feel free to make any brightly colored image of this type. It does not have to be exactly like the one I created.

Go to the [Images] panel, and load the image that you created (or the one that I supplied on-line, "ColorCircle.iff.")

Open the [Surfaces] panel, and make sure that the Current Surface is "Color Disc." Click on the [T] next to "Surface Color" and check that the "Texture Type" is "Planar Image Map." Set the "Texture Image" to "ColorCircle.iff," (or the image that you supplied) and the "Texture Axis" to [Z Axis]. As well, click on [Automatic Sizing], and [Use Texture].

For the general surface settings, try using:

Luminosity ____100 %

Diffuse Level ____70 %

Specular Level __20 %

Glossiness ______64

Reflectivity ____6.5 %

Leave the rest of the parameters at their defaults, and change Current Surface to "Star Plate." For this object's surface, use the following settings:

Surface Color____200, 200, 200

Luminosity ____0

Diffuse Level ____30 %

Specular ______40 %

Glossiness ______16 or Low

Reflectivity ____20 %

Transparency __0

Enable Color Highlights.

Change the Current Surface to "Cross Plate." For this surface, use the same settings, but change the Surface Color to R: 211, G: 215, B: 185 and the Diffuse Level to 35 %.

Okay, the surfacing is done. Now to lock the settings into the objects. Open the [Objects] panel, and click "Save All Objects," and answer "Yes" to the requester that pops up.

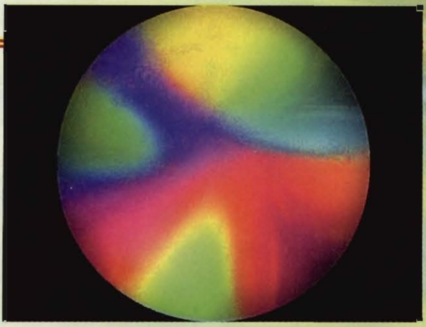


Figure 9

15. As an added detail, I'd like to create a simple background. Open the [Effects] panel, and check Gradient Backdrop. Then set the parameters to:

Zenith Color______0, 0, 0

Sky Color ________24, 150, 155

Sky Squeeze ____5

Ground Squeeze __5

Ground Color ____0, 0, 0

Nadir Color ______55, 74, 148

That done, go to the [Camera] panel, and set a resolution of your choice. I've set mine to Medium Resolution, Square Pixels,(640x480), and Enhanced Low antialiasing.

Finally, switch to the [Lights] panel, and drop Ambient Intensity to 0 %, and change the Light Type to "Spotlight."

Right! Now would be a great time to save the scene. I saved it in the "Newtek/Scenes/Layerlight" directory as — you guessed it — "LayerLight.lws."

16. When ready, open the [Render] panel, and turn off Render Display (if it was on), and click on either [Save Animation] or [Save Images].

Select a format and location to save the file(s) in.

As well, make sure of the following:

Render First Frame	1
Render Last Frame	60
Render Frame Step	1
Automatic Frame Advance	On

Click [Render] to start the rendering process. When done, you should have an animation that you can loop. I've included a still frame as the opening image to the tutorial (frame 30).

Jared Brookes is a freelance 3D Modeler/Animator and analog synthesizer programmer based out of Calgary, Canada. Feel free to check out the music and computer-generated images on his Web site: "Synthetic Reality" at: www.blitter.com

Toast Master Flying High

this article has additional
Online Content
www.newtekniques.com/bonus

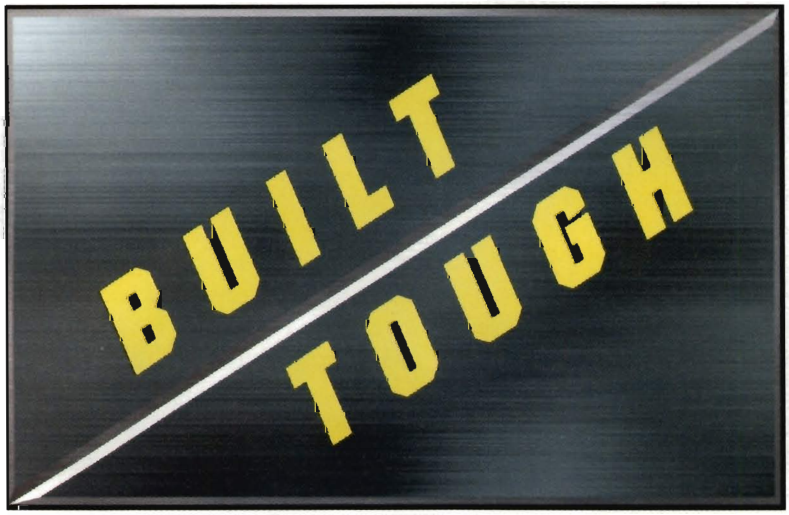
Wrestling Better Transitions out of the Toaster

by
Bohuš Blahut

From simple fades to falling sheep, from helmet-knocking football players to Kiki-fairies, the Video Toaster has grabbed the limelight with its wealth of transitions. Filled to bursting by NewTek, libraries of every description have been added to the basic set in recent years.

While warping planets and Kiki-kicks offer impressive and immediate gratification, many editors have so abused the transitions that they have become hackneyed cliches. These culprits can indelibly stamp your program with the dreaded "Toaster Footprint."

Once the thrill is gone of having used *all* of the Toaster's transitions (though some of us never get over it, eh boys?), most editors crave to create their own transitions. NewTek has delivered several upgrades to the Video Toaster and has expanded the transitions to include full color, animation, shadows and soft edges. But the ability for users to configure their own transitions has never been fully implemented. Other "slices" of the Toaster always have been flexible, but the wipes come "as-is." Even rearranging the organization of the wipes is a fairly recent addition. What about customizing the Toaster's transitions beyond that?



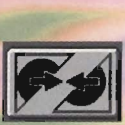
While NewTek never promised a transition editor, it was heavily implied to be just around the corner. It never materialized. A few years ago third party developer, Dimension Technologies, raced in to fill the gap. They created Wipe Studio, which recently was released by Nova Design as a part of the Millennium upgrade to the Video Toaster and Flyer. (Now that everyone has Wipe Studio in his or her toolkit, we will investigate it further in the future.)

Even with this and other third party tools, creating custom transitions has never been easy. Trust me. I'm responsible for creating and converting the hundreds of wipes in the Millennium package. Usually it entails some lengthy sessions inside LightWave or DeluxePaint. And Toaster 2000 users still are excluded from using color effects.

How would you like to create 24-bit transitions on any Amiga? How about if you only had to render a single frame in LightWave? A miracle? Not really. Any Amiga Toaster is capable of creating the effects described below. You can achieve them with my DVS Mega-towered Amiga 4000 or the scuffed 2000 that I picked up last year at a garage sale for $75.

The magic is in using the digital effects. You can recognize them easily by the large dot in the middle of the crouton. We are interested in the effects that split the screen up into fairly regular geometric forms. The transition also must leave the incoming or outgoing image flat. We do not want any warping or curling.

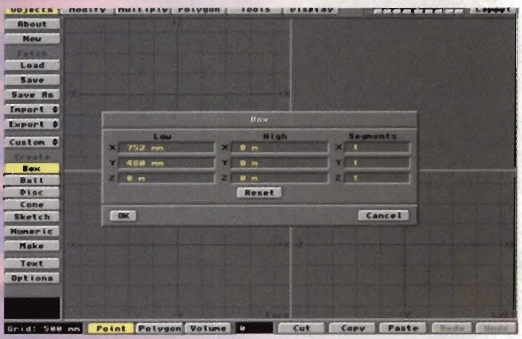
In this tutorial, we will create a single image in LightWave. The image will be designed so that a logical seam exists in the picture. The Toaster's digital wipe will split the image open or closed along the seam. To the viewer, this will look like a 24-bit door or shutter transition closing or opening upon the video.



We will work with a simple wipe called [Diag In]. 4x users will find it in the [Digital] directory. (If you're still using 3x, you can use the [Split In] and [Split Out] effects in bank E to create a similar new transition. Instead of a diagonal seam, you will need to make a vertical one - like elevator doors.)

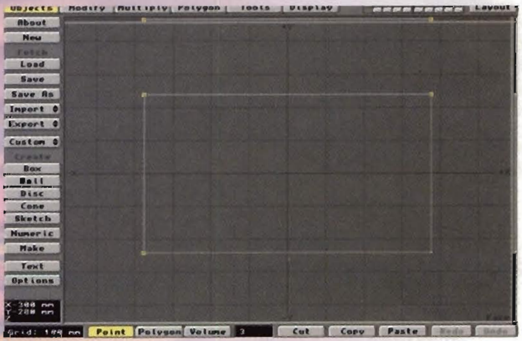
We will create our custom transition in LightWave. Before you scurry away, let me emphasize that we are creating only one frame. Even the slowest Amiga can render this simple image. Just think of it as being one coffee break away from having some cool new transition that will impress your clients.

(Figure 2)



Objects
Modify
Multiply
Polygon
Tools
Display
Layout
About
New
Load
Save
Save As
Import
Export
Custom
Box
Ball
Disc
Cone
Sketch
Numeric
Make
Text
Options
Box
Reset
OK
Cancel
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo

	Low	High	Segments
X	752 mm	0 m	1
Y	480 mm	0 m	1
Z	0 m	0 m	1



Objects
Modify
Multiply
Polygon
Tools
Display
Layout
About
New
Load
Save
Save As
Import
Export
Custom
Box
Ball
Disc
Cone
Sketch
Numeric
Make
Text
Options
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo

(Figure 3)

1. Open up any version of LightWave's Modeler. In 3x Toaster, you click on the [3D] button. In 4x, you go to the [Programs] pop up list and select [LightWave]. (The following Figures are taken from the 4x version of LightWave.)

Click on the [Modeler] button in the upper right hand corner.

2. Along the left, click on Create [Box]

Hit the [n] key on the keyboard. In the numeric options panel, input the following numbers for our box:

	Low	High	Segments
x	752 mm	0	1
y	480 mm	0	1
z	0	0	1

Accept the settings by clicking [OK].

Hit the [Enter] key on your keyboard. This will create the box as a polygon.

Center the box by pressing [F1]. Most systems are set up with the centering macro on F1. If not, just select [Center] from the pop up menu.

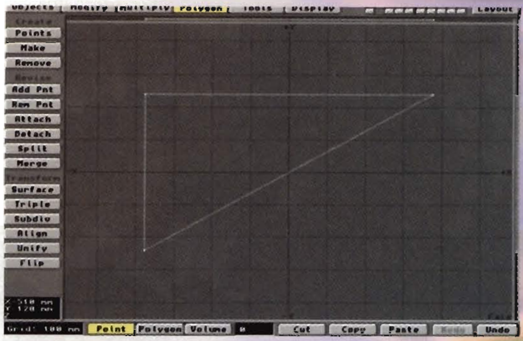
Now, we have a box the exact size of a Video Toaster framestore. We will be using this polygon as a template for building the transition to the correct proportions of a Toaster framestore.

3. Next we will create a shape that matches the [Diag In] above.

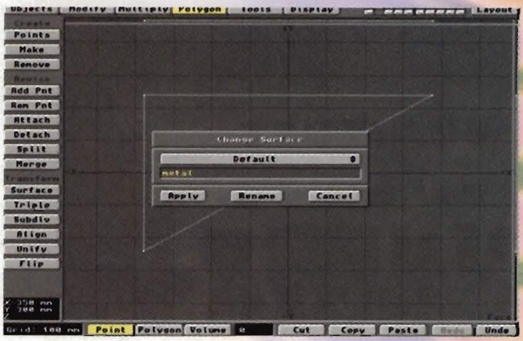
At the bottom left of the screen, pick [POINT].

While holding the Left Mouse Button, start in the lower left corner and select the first three points going clockwise. Omit the point in the lower right hand corner. (Figure 3)

(Figure 4)



Objects
Modify
Multiply
Polygon
Tools
Display
Layout
Create
Points
Make
Remove
Revise
Add Pnt
Rem Pnt
Attach
Detach
Split
Merge
Transform
Surface
Triple
Subdiv
Align
Unify
Flip
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo



Objects
Modify
Multiply
Polygon
Tools
Display
Layout
Create
Points
Make
Remove
Revise
Add Pnt
Rem Pnt
Attach
Detach
Split
Merge
Transform
Surface
Triple
Subdiv
Align
Unify
Flip
Change Surface
Default
Apply
Rename
Cancel
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo

metal

(Figure 5)

Hit [c] on the keyboard. This will copy the selected points into memory.

Hit [2] on your keyboard (not the numeric keypad). Your box will have disappeared because you have jumped to the second layer.

Hit [v] to paste the points into the fresh workspace.

Again, highlight these three points in a clockwise order. At the top of the screen, select [Polygon].

The top left has a button under the heading "Create" marked [Make]. Click it. Instant triangle. (Figure 4)

4. Hit [q] to bring up the surface requester. We need to name the surface that we just made.

Type in "metal." (Figure 5)

5. Hitting [b] brings up the bevel controls. We want to bevel this simple triangle to give it depth and interest.

Enter "10mm" for both the Inset and Shift. Make sure that [Inner] Edges is highlighted. (Figure 6)

Click on the Surface [Custom] button under bevel - this will let you name the surface of the bevel that you create. Call it "metal_bevel."

• •➤ 40

PRO VIDEO
CAMERAS

B&H

PHOTO - VIDEO - PRO AUDIO

MONITORS
SONY Panasonic. JVC

420 Ninth Ave.

Between 33rd & 34th Streets,
New York, N.Y. 10001

Store and Mail Order Hours:
Sun. 10-5, Mon. thru Thurs. 9-7
Fri. 9-1, Sat. Closed

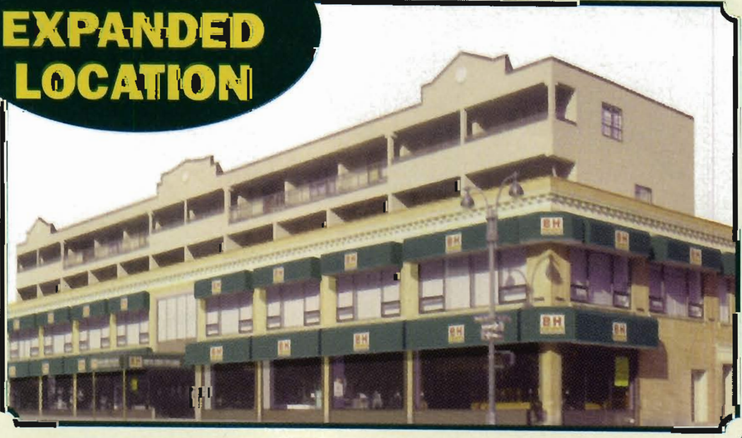
For Orders Call:
800-947-9938
212-444-5038

or FAX (24 Hours):
800-947-9003
212-444-5001

On the Web:
www.bhphotovideo.com
We Ship Worldwide

VIDEO
Pro Video
Tripods
Panasonic

OUR NEW EXPANDED LOCATION



QUICK DIAL 74

SONY

DCR-PC100

With the introduction of the DCR-PC100 Digital Handycam camcorder, Sony has introduced the first Mega-Pixel CCD imager.With 1070k Pixels, the PC100 has the ability to produce stunning digital video and still image quality never before offered before in a consumer camcorder. When shooting video, the DCR-PC100 is capable of producing a horizontal resolution of over 500 lines. When using the Digital Still Image feature, the Memory Stick equipped memory mode in the PC100 allows a large, 1152 x 864 image size.

Audio/Video Performance
- Digital Video Recording
- 1st Mega-Pixel CCD DV Handycam Camcorder (1070k Pixel)
- Over 500 Lines of Horizontal Resolution
- Memory Mode with Memory Stick digital storage media
- High Quality 1152 x 864 still image resolution
- Advanced "HAD" CCD technology
- Professional Quality Carl Zeiss Lens
- 10X Optical/120X Digital Zoom
- NightShot 0 Lux with Slow Shutter

Editing
- i.LINK DV Interface

Power Management
- Stamina Power Management 6.5 Hours
- InfoLithium Battery w/AccuPower meter system

Convenience
- Analog Recording Inputs
- Serial Port Connection (RS232C)
- LaserLink wireless transmitter system
- 2.5" Color LCD Display • Color Viewfinder
- Intelligent Accessory Shoe

Special Features
- Progressive Shutter System

DCR-TRV900 3-CCD DV Camcorder

- Three CCDs with 380,000 pixels each for excellent color fidelity and higher S/N ratio
- Progressive Scan CCD delivers clean edges and an overall sharper picture for still images
- 12X optical and 48X digital zoom lens
- 4-lux minimum illumination
- Analog recording capability lets you record from analog sources like Hi8 & S-VHS and master onto DV cassettes
- Zebra pattern indicator for over exposure, and color bar generator for properly adjusting your monitor
- Interval and frame recording for single frame recording and time-lapse effects
- Up to 8 hours recording time with optional NP-F950 InfoLithium Battery
- Crystal clear still/slow motion playback
- Intelligent accessory shoe provides synchronized operation of lights and microphones, automatically
- LaserLink system provides wireless connection of up to 16-feet between the camcorder and TV (requires optional IFT-R10 receiver)
- 5-mode Program AE for proper exposure in a variety of situations: Aperture priority, Shutter Speed priority, Sports Lesson, Sunset & Moon, Low Lux

Memory Mode:
- Memory mode allows you to capture still images and save them to a floppy disc (with supplied adapter), or an optional Memory Stick. You can also automatically copy all of your still images from your mini DV cassette tape directly to a floppy disk (w/supplied adapter)

- Capture images in JPEG file format with a choice of three different quality modes: Standard, Fine, and Super Fine. Save in JPEG format where they can be viewed on any Mac or PC. When you open the images, you will see large 640 X 480, 24-bit color detailed shots
- Date/Time stamp automatically writes the date and time to the file information
- Delete/Protect function allow you to save your favorite shots or delete undesirable ones
- Continuous record mode allows you to capture 4 shots successively in just a few seconds
- Index mode lets you preview six thumbnails at a time. Create a slide show of your favorite shots for playback

Canon

XL-1 3-CCD Camcorder with Interchangeable Lens Mount

With 3-CCDs, exclusive interchangeable XL Lens Mount System, unmatched optical technology, SuperRange Image Stabilizer, DV and simultaneous four channel audio recording, the XL-1 offers unmatched image quality and shooting versatility.

Interchangeable XL Lens Mount System
- Interchangeable XL lenses for unsurpassed flexibility and multi-coated optics to achieve 600 lines of resolution.

16:1 Optical Zoom with SuperRange Image Stabilizer
- The 16:1 has a focal length range of 5.5 to 88mm (35mm equivalent of 39 to 633mm). It offers variable speed zoom, manual zoom and manual focus control and has a one-push auto-focus button and built-in 1.5X ND filter.
- The SuperRange Optical Image Stabilizer uses a motion vector to examine the image after it is received by the CCD to detect any shake.

Digital Audio
- Three digital audio modes (16 bit and two 12 bit modes) and simultaneous recording of four separate tracks. You can output each signal independently.
- Audio inputs with independent level controls.

3-CCDs
- Three 270,000 pixel CCDs with advanced Pixel Shift technology achieves 530 lines of resolution.
- Large 72 micron CCDs deliver a 4dB improvement in sensitivity.

Three Recording Modes:

Unique Design & Dual Action Carrying Handle

Additional Features:
- 180,000-pixel color viewfinder
- Automatic and manual white balance, gain (five preset levels from -3 to +12dB) and exposure lock.
- Zebra pattern and color bar generator
- Composite, S-Video output, DV (IEEE 1394) in/out Control L
- Digital fader and wide screen TV effect
- Headphone jack with level adjustment
- Remote control with jog/shuttle dial

GL-1 The First Digital Video (DV) Camcorder with PRO L-Series Fluorite 20X Zoom Lens

Encompassing the design characteristics of a consumer camcorder with its compact size and 2.5" flexible LCD view screen, color viewfinder, the GL1 is also equipped with much of the same functionality that attracts newscasters and independent filmmakers. By extending broadcast-quality DV technology to prosumers, Canon is bringing high-quality video production capabilities to homes and small businesses. For users interested in visual computing, this FireWire IEEE 1394 compatible camcorder is ideal for producing QuickTime movies and creating images for distribution via the internet.

- Professional L-Series Fluorite Lens - a material that provides outstanding resolution, contrast and color reproduction and minimizes color aberration, especially in high-magnification lenses.
- 20X Optical Zoom - At a 35mm focal length equivalent of 40 - 806mm, the 20X optical zoom transforms distant subjects into dramatic close-ups.
- 100X Digital Zoom-capable of extending between 40X-100X. At full telephoto, the 35mm focal equivalent is 80-600mm.
- Optional WD-58 Wide-converter - will increase by 0.7X, 28mm in 35mm focal equivalent, for indoor shots or panoramic views.
- Optical Image Stabilization - eliminates image shake due to a wide range of movement and/or high wind conditions.
- Three Shooting Modes -Frame Movie mode allows users to record high-speed action at 30 fps. - Normal Movie mode delivers more than 500 lines of resolution - Digital Photo mode, with self timer, captures more than 700 still frame images on a single 80-minute cassette in SP mode. For SLR-style flash photography, the digital photo mode will accommodate a selection of Canon's speedlight flashes, including the 220EX, 380EX or 550EX.
- Direction Accurate Microphone.
- Programmed AE - Offers seven advanced recording controls -Full Auto Green Zone -Auto Mode -Manual Mode -Spotlight -Sand & Snow -Shutter Priority/Aperture Priority
- Picture Adjustment Supports -Camera Sharpness adjusts picture sharpness before recording.

SONY

DSR-300 3-CCD Digital (DVCAM) Camcorder

The most advanced DVCAM camcorder, the incredibly affordable DSR-300 incorporates three 1/2-inch CCDs, DSP digital technology and is the only one-piece camcorder in its class with 100% total digital transfer between the camera section and the VCR section.

High Performance:
- Three 1/2-inch 410,000 pixel PowerHAD CCDs provide high quality acquisition with increased sensitivity plus "FIT like" reduced vertical smear of -110dB.
- Delivers high quality, artifact-free images. Offers an outstanding 800 lines of horizontal resolution, a sensitivity of F11 at 2000 lux and a true minimum illumination of 0.5 lux. It also features an advanced LSI Digital Signal Processor (the same one used by the DXC-D30) for a high S/N ratio of 62dB.
- Hyper Gain mode using DPR (dual pixel readout) allows shooting in extremely low light with virtually no noise.

Digital Signal Processing:
- Skin Tone Detail and Correction— Offers a more natural appearance by smoothing details in the picture. A feature normally found in much higher priced cameras. Skin Tone Detail and Correction reduces and controls wrinkles in the selected skin area without changing the other areas of the image.
- TruEye and DynaLatitude— Just like in the DXC-D30, this feature allows the camera to reproduce natural colors with a wide dynamic range of contrast.
- Black Stretch and Compress: Emphasizes the contrast in dark areas of the picture without any color changes that would require color correction in the editing process.

Digital Functions:
- Very similar to the DSR-1, the VCR section includes SetupLog, FreezeMix and EditSearch functions. SetupLog automatically records status of the camera settings onto the DVCAM cassette throughout the shooting process. FreezeMix and EditSearch allow you to search for a certain scene and retake if necessary by superimposing the recorded image to the live image in the viewfinder.
- ClipLink logging is also available using the optional DSBK-301 interface board. ClipLink records index pictures on the tape as well as, shot list data, logging function (reel #, time code, take # and OK/NG (No Good) shot information.

JVC

GY-DV500 1/2-inch 3-CCD Professional DV Camcorder

The world's first DV camcorder designed from the ground up for professional ENG work, the GY-DV500 combines the convenience and cost-effectiveness of Mini DV with the performance and features you need. It incorporate three 1/2-inch CCDs for superior picture performance (equivalent to 750 lines of resolution) superb sensitivity of F11 at 2000 lux and minimum illumination of 0.75 lux (LoLux mode). Ruggedly constructed with a rigid diecast magnesium housing providing the durability professionals crave, the GY-DV500's compact design and light weight (lesss than 11 lbs. fully loaded) makes it extremely portable. Additional features like the menu dial and Super Scene Finder assure ease-of-use and shooting flexibility, while the IEEE1394 and RS-232 interface allow integration into various non-linear and post-production systems. A professional camcorder in every sense, the compact, lightweight GY-DV500 redefines acquisition for corporate, educational, cable and broadcast production, as well as wedding videography and multimedia applications.

Professional Specifications

- Applies JVC's DSP with advanced 14-bit video processing to bring out more natural details, eliminate spot noise, accurately reproduce dark areas, and restore color information in dark areas.
- Three high-density 1/2" 380,000 pixel IT CCDs ensure the best possible image quality.
- CCDs are equipped with advanced circuitry to virtually eliminate vertical smear when shooting bright lights in a dark room. Ensures efficient light conversion with a sensitivity of F11 at 2000 lux.
- CCD Defect Correction function evaluates white defects with the lens closed and then stores their addresses in memory. When the camera is turned on, the data is sent to the DSP for storage and real-time correction.
- Black Stretch/Compress function ensures accurate reproduction of black areas on the screen. Advanced color matrix circuits give even difficult images a very natural appearance.
- Multi-stream parallel digital pipeline processing at 40 MHz creates an ultra-smooth gamma curve, calculated using a true log scale algorithm. The result is a dynamic range of 600% to accurately reproduce fine details and colors in shadows or highlights.

Professional Performance

- When activated, the Lolux mode increases sensitivity with almost no increase in noise. Lolux lets you capture high-quality video footage with excellent color balance at just 0.75 lux minimum illumination.
- Multi-zone iris weighting system gives priority to objects at the central and lower portions of the picture for accurate auto exposure under any condition, even if a bright subject moves into the picture.
- Adjustable gamma for adjusting the "feel" of the picture according to taste. Adjustable detail frequency for setting picture sharpness for a bolder or finer look.
- Viewfinder status display uses characters and menus to diplay selected information, including audio indicator, tape and battery remaining time, VCR operation and warning indicators. Camera settings and setup parameters can also be checked at a glance. A built-in menu dial lets you quickly navigate through the viewfinder menu.
- Highlight Chroma Processing maintains color saturation in highlights. The result is natural color reproduction, even in bright highlight portions of the picture.
- Smooth Transition mode ensures a smooth transition with no jump in color or light level taking place when manually changing gain or white balance settings

Professional Audio

- To complement its superior video performance, the GY-DV500 offers outstanding digital PCM sound. You can choose between two 16-bit 48-kHz channels or two 12-bit 32-kHz channels with a dynamic range of 85 dB.
- In addition to camera mounted mic, has two XLR-balanced audio inputs with 48v phantom power and manual audio control.Phantom power can be switched off when not in use.
- Side-mounted speaker lets you monitor audio in playback and recording modes without headphones. The speaker also delivers audible warnings.

Compact and Lightweight

- Measuring 10-7/8 x 9-11/16 x 5-1/8 the GY-DV500 amazingly enough is almost half the size of the GY-X2B. Weight is carefully balanced for ease of use in an ENG environment and extended shooting.
- Consumes less than 20 watts of power, *eliminating the need* for cumbersome and heavy, large-capacity battery packs.

Automatic Functions

- Full Auto Shooting (FAS) mode for point-and-shoot ease of operation. You simply zoom and focus. Activating the Full Auto Shooting sets the camera to the Auto Iris Mode, even if the lens is set to manual. Automatic videolevel control (ALC) is also activated, along with Extended Electronic Iris (EEI) and Full Auto White, which provide both variable gain and variable shutter. Shoot continuously from a dark area to a bright area without changing Gain, Iris or ND filter.
- ALC (Automatic Level Control) with EEI (Extended Electronic Iris) for continuous shooting in all light levels — no need to switch gain settings or ND filter.
- Continuous Auto Black (CAB) circuit assures perfect Black Balance in a changing environment without having to interrupt shooting.
- Accu-Focus activates the electronic shutter for approximately ten seconds, forcing open the Iris. A s a result, the depth of focus is minimized, and the lens can be focused quickly and precisely.

Conveniences

- Time code and index IDs allow frame accurate non-linear editing and mastering on standard formats *with quick easy* access to any target point.
- LCD display system let you switch or set functions, while referring to the counter or the on-screen display. Mode selection and initialization are also available via the menu display. Back-lit display supports shooting in dark areas.
- Back tally lamp lights to let you know that the camera is entering the Record mode. It flashes during the transition to the Record mode and when an error is detected in the camera.
- Variable Scan function allows flicker-free shooting of computer monitors. Shutter speeds can be set from 1/60.5 to 1/196.7 of a second in 255 increments to precisely match the scan rate of the monitor.
- Tape/Battery Remaining indicator means you always know exactly how much tape and battery power remains.

B&H
PHOTO - VIDEO - PRO AUDIO

THE PROFESSIONAL'S SOURCE FOR PHOTO,

FOR ORDERS CALL:
800-947-9938
212-444-5038

OR **FAX** (24 HOURS):
800-947-9003
212-444-5001

MOST ORDERS SHIPPED WITHIN 24 HOURS
OVERNIGHT SERVICE AVAILABLE
On the Web: http://www.bhphotovideo.com

QUICK DIAL 74

SONY

DSR-PD100 3-CCD Mini DVCAM Camcorder

The smallest DVCAM camcorder, the DSR-PD100 is also the first one with built-in image capture capability. The highly compact camcorder features three 1/4" 380,000 pixel CCDs that allow two scanning modes: 480 progressive (for stills) or interlaced (for video).

- Three 380,000 pixel CCDs complement DVCAM with a high standard of quality for this class of camera. DVCAM offers superior video and audio quality, and reliability for professional use
- The CCD's can be switched to scan in two ways: Interlace Scan for recording moving images and Progressive Scan for recording still images
- Super SteadyShot compensates for unwanted camera movement without reducing image quality
- A built-in 12X zoom lens is supplemented by a 48X digital zoom that can provide really close up shots
- Manual control of focus, gain, white balance and shutter speed. Also has full automatic control
- i.LINK interface provides a single cable connection to transfer digital video and audio
- Records PCM digital stereo sound in both 48 kHz mode (16-bit) and 32kHz mode (12-bit). When a recording has been made in 12-bit mode, another stereo channel can be added later
- The DSR-PD100 has a 3.5" color LCD monitor with 184,000 pixels, opening 90° to the side and swiveling 180°. Also has a 180,000 pixel color viewfinder.
- Can record still images on both tape or removable media, such as Memory Stick
- Start/Stop/Zoom of the camcorder and VTR operation, plus slow playback or search can be controlled by the supplied wireless remote commander
- Supplied XLR adaptor attaches onto the hot shoe of the camcorder, allowing external professional microphones to be connected to provide high quality audio sources. Through XLR adaptor, DC power (+48V for a microphone is also supplied from the DSR-PD100
- A 0.7X wide conversion lens is supplied, complete with lens hood, lens cap and protective bag
- Includes 4 MB Memory Stick & Memory Stick/PC Card Adaptor
- Weighs just 1kg (2.2 lbs) with a battery and a tape. A magnesium alloy die cast body keeps it light but robust

DSR-200A 3-CCD Digital (DVCAM) Camcorder

Combining a compact and lightweight body with the superior picture quality of DSP (Digital Signal Processing) and the DVCAM format, the DSR-200A is the ideal acquisition tool for video journalists, event and wedding videographers, stringers and production houses. 500 lines of horizontal resolution, 48kHz or 32kHz digital audio, three hour record time, and minimum illumination of 3 lux is only the beginning. Other features include 16:9/4:3 capability, Steady Shot, high resolution 1-inch viewfinder, time code operation, time/date superimposition and an IEEE-1394 interface for direct digital output. Offers full automatic as well as manual control of focus, iris, gain, white balance and shutter speed.

- Variable servo 10X optical power zoom lens goes from 5.9 to 59mm in 1.7 to 24 seconds. The manual zoom rocker is continuously variable right up to where the digital 20X zoom kicks in.
- Sony's Super Steady Shot reduces high frequency camera shake without compromising image quality. SteadyShot uses horizontal and vertical motion sensors that allow it to work accurately while zooming, moving (even shooting from a car), and shooting in low light conditions.
- Has digital effects including audio and video fade, overlap and Slow Shutter.
- Automatic and manual focus, iris, shutter, gain and white balance. Iris is adjustable in 12 levels from F1.6 to F11, shutter from 1/4 to 1/10,000 of a second in 12 steps. Gain from -3dB to +18dB in 8 steps.
- Zebra Pattern indicator, built-in ND filter.
- Custom Preset function lets you preset, store and recall custom settings for color intensity, white balance (bluish or reddish), sharpness and brightness.
- Stores Photo, Date/Time, Shutter Speed, Iris, Gain and F-stop for easy recall. So if you have to re-shoot, you know your original settings for every scene and frame.
- Records Drop/Non-Drop Frame time code. Time code can be read either as RC time code or as SMPTE time code
- Has a large 1-inch B&W viewfinder with 550 lines of resolution for easy focusing even in low contrast lighting situations. Separate information sub panel displays time code, battery time, tape remaining and other camcorder functions without cluttering up the viewfinder.
- Records 16-bit/48kHz audio on one stereo track or 12-bit/32kHz with two pairs of stereo tracks (L1/R1, L2/R2), so you can add stereo music or narration.
- One-point stereo electret condenser mic for clear stereo separation. Directivity can be selected from 0°, 90° & 120°.
- Automatic & manual (20-step) audio level record controls. Monitor audio with headphones or from the LCD panel which has an active VU meter.

DSR-20/40 DVCAM Player/Recorders

The DSR-20 and DSR-40 are versatile DVCAM VCRs with compact chassis' and a variety of convenient functions for recording, playback and simple editing. They feature Auto Repeat Playback, Power-On Recording/Playback, multiple machine control interfaces and i.Link (IEEE1394) input and output. And, of course, they offer the stunning image and sound quality inherent to the DVCAM format.

i.LINK

- They both offer i.LINK ((IEEE1394) input and output. In addition, in the "Digital dubbing including TC Copy" mode, full information of video, audio and time code of the original tape can be copied to another tape. Especially useful when making working copies of the original.

Inputs and Outputs

- They provide a full range of analog video inputs and outputs for integration into current analog-based systems. They both offer composite and S-Video input/output, while the DSR-40 (only) offers a component output as well. The DSR-20 is equipped with analog audio inputs and outputs (RCA), the DSR-40 with RCA inputs and XLR-balanced output. These connections in combination with their i.LINK interface allow a smooth transition to an all digital system in the future.

Record/Playback Functions

- Automatic repeat function for repeated playback. After reaching either the end of the tape, the first blank portion or the first index point, the DSR-20/40 automatically rewinds the tape, then starts playing back the segment again.
- They are capable of searching for Index Points, which are recorded on the tape as "in-point" marks every time a recording starts. They can also search for photo data recorded on a DVCAM cassette by the DSR-200A/300/PD-100, or where the recording date has been changed.

Reference Input

- External sync input enables synchronized playback with other VCRs. Especially important in A/B Roll configurations. In addition, the DSR-40 only allows adjustment of H-sync and SC phase via the menu.

Control S Interface

- The DSR-20/DSR-40 have a Control S input allowing control via the optional DSRM-20 Remote Control.
- The DSR-20 adds a Control S **output** connector allowing two or more (up to 50) DSR-20s to be daisy-chained and controlled from one DSRM-20.

DSR-20 Only

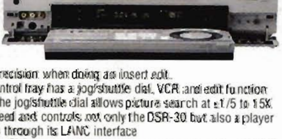
- The DSR-20 can be powered by AC or DC.
- Equipped with Control L interface, the DSR-20 can perform simple Time Code-based editing when connected to another DSR-20 or other similarly equipped VCRs/cameras.
- In addition to Control L, the DSR-20 also incorporates an RS-232 interface for remote control of basic VCR functions from a PC.
- Supplied with the RMT-DS20 Wireless Remote for control of basic VCR functions.

DSR-40 Only

- Equipped with an RS-422A interface, the DSR-40 can perform as the editing player in A/B roll or cut editing system.
- It also has a simple recording function which can be controlled either manually or via its RS-422A interface.
- The DSR-40 is not equipped with a synchronization capability, the editing accuracy is performed by pre-roll and play.

DSR-30 DVCAM Digital VCR

The DSR-30 is an industrial grade DVCAM VCR that can be used for recording, playback and editing. DV standard 4:1:1 sampling digital component recording with a 5:1 compression ratio provides spectacular picture quality and multi-generation performance. It has a Control L interface for editing with other Control L based recorders such as the DSR-200A DVCAM Camcorder or another DSR-30. It also has a continuous auto repeat playback function making it ideal for kiosks and other point of information displays. Other features include high quality digital audio, IEEE-1394 Digital interface and external timer recording. The DSR-30 can accept both Mini and Standard DVCAM cassettes for up to 184 minutes of recording time, and can playback consumer DV tapes as well.



- Records PCM digital audio at either 48kHz (16-bit 2 channel) or at 32kHz (12-bit 4 channel) .
- Equipped with Control L, the DSR-30 is capable of SMPTE Time Code based accurate editing even without an edit controller. Built in editing functions include assemble and separate video and audio insert .
- By searching for either an Index point or Photo Data recorded by the DSR-200A camcorder, the DSR-30 drastically cuts the time usually required for editing. The DSR-30 can record up to 135 Index points on the Cassette Memory thanks to its 16K bits capability.
- Audio lock ensures audio is fully synchronized with the video for absolute precision when doing an insert edit.
- Built-in control tray has a jog/shuttle dial, VCR and edit function buttons. The jog/shuttle dial allows picture search at ±1/5 to 15X normal speed and controls not only the DSR-30 but also a player hooked up through its LANC interface
- DV In/Out (IEEE 1394) for digital dubbing of video, audio and data ID with no loss in quality.
- Analog audio and video input/outputs make it fully compatible with non-digital equipment. Playback compatibility with consumer DV tapes allows you to work with footage recorded on consumer-grade equipment. Tapes recorded in the DSR-30 are also compatible with Sony's high-end DVCAM VCR's.

QUICK DIAL 72

canopus

DVRaptor DV Editor for Windows 95/98/NT

DVRaptor is a next generation DV card which links your DV camera to your PC. With the Raptor you can capture your DV footage through the i.LINK connection while simultaneously viewing full motion video on your computer display and video monitor. Raptor Video Batch Capture allows you to select the clips you want before you bring them into the computer. Raptor Navigator automatically detects clips on your video tape and stores them into a tape catalog. Once in the catalog you can arrange and edit your clips and then batch capture them to your hard disk. Capture entire DV tapes in one pass in addition to selective batch capture. DVRaptor also supports long-form seamless video capture. With seamless capture the DVRaptor will fill up your AV hard drives with video, spanning multiple volumes.

- High performance PCI card with bus mastering
- High speed Canopus software DVcodec
- Full motion video window
- S and Composite video in and out for real-time preview and video pass-through
- Native DV audio support through
- Canopus ACM driver
- High quality filtering and imageenhancement for still image capture
- No 2GB file size limitation
- Seamless video capture and output
- SmartPlay for seamless playback from timeline
- Frame accurate camera control
- Supports DV and DVCAM

QUICK DIAL 731

PINNACLE SYSTEMS

miroVIDEO DC-30 *PRO*

PCI Capture Card for Windows 95/NT

Pinnacle Systems' miroVIDEO DC30 Pro is the ideal solution for creating professional quality video productions. If you create corporate, commercial, wedding, event, multimedia or Internet videos, the high-powered software bundle and state-of-the-art hardware of the miroVIDEO DC30 Pro gives you unbeatable results. Includes Pinnacle Systems' powerful TitleDeko character generator plug-in for Adobe Premiere 5.1. Add creative, custom titles toyour video productions with Emmy Award-winning technology. Use the full version of Adobe Premier 5.1 to capture, edit and output professional quality productions for video, multimedia, and the web with . Also includes 300 unique Pixélan Software Video SpiceRack transitions and a high quality video and audio breakout box. The breakout box allows for convenient placement of connections on your desktop.

- 2.4:1 compression ratio for a better final video image quality. Compression ratios under 4:1 are considered to be "broadcast quality."
- Full NTSC, PAL, SECAM, for worldwide compatibility.
- Real-time video overlay on the computer monitor eliminates the need for an external video monitor.
- Professional breakout box brings your connections up front and easily accessible

Bundled Software:

- Full version of Adobe's Premiere 5.1 editing software gives you powerful editing tools to create professional productions
- Bring Hollywood-quality graphics to your video productions with TitleDeko. Easily add amazing titles to all of your video productions. Titles can fade up, scroll and even blend with pictures. Apply glows, neon and metallic looks, textures, shadows and shapes to your titles with any TrueType font,
- Pixelan Software's Spice Rack gives you over 300 transitions to choose from.
- Sonic Foundry's Acid Music software lets you create royalty-free music for your productions.
- MiroINSTANT Video saves time and disk space with accelerated, intelligent rendering. When rendering and playing your final production, miroINSTANT Video overcomes the 2GB AVI file size limitation, allowing you to quickly put more video directly onto tape – in one pass.

DC-30 *PRO*	649.00
NEW! DC-50	1599.00

matrox RT-2000

Real-Time Non-Linear Editing

Matrox RT2000 is a realtime nonlinear editing solution for corporate and event video artists, that provides an impressive array of professional features at an unprecedented price. The revolutionary Matrox Flex 3D™ architecture of RT2000 exploits the explosive 3D graphics performance of the award-winning Matrox Millennium G400 accelerator to provide broadcast-quality 3D DVE and 32-bit uncompressed animated graphics in a native DV editing environment. MPEG-2 output for DVD, Video CD, and web video streaming applications, along with 1394 and analog video output for tape distribution, rounds out the solution.

Real-Time Non-Linear Editing

- Matrox RT2000 lets you work with two video streams and a 32-bit, uncompressed, animated graphics layer in real time. Choose from organic and 3D transitions, 2D and 3D DVE, and transparency effects – in real time
- Realtime editing power gives you the creative freedom to experiment. Theres no penalty for changing your mind. Everything happens instantly, at full online quality, and you see the results immediately on your PAL or NTSC monitor.
- Instant random access to any frame in your project gives you a very responsive realtime scrubbing interface. You can see what's happening at any point in your timeline, at full quality, whenever you want – without waiting for a preview to render

MPEG 2 Editing

- If you are acquiring video from an analog source, you can chose to edit in DV or in MPEG-2 4:2:2 I-Frame. Matrox RT2000 lets you capture and edit video in the MPEG-2 I-Frame format at variable bit rates between 10 and 25 Mbps. Whereas DV is fixed at 25 Mbps, MPEG-2 lets you digitize video at lower bit rates so you can make the trade-off between storage space and video quality when working on long form projects. You can offline at the lower bit rates and then autoconform at higher quality MPEG-2 or DV.
- MPEG 2 I-Frame is a better format for editing than MPEG-2 IB or IP that you may have heard about because it gives you instant access to every frame in realtime for frame-accurate edits, fast cuts and seeks, and a responsive scrubbing interface

Broadcast-Quality 3D Effects

- Matrox RT2000 harnesses the power of the Matrox Millennium G400 graphics accelerator via the revolutionary new Matrox Flex 3D architecture to deliver realtime, broadcast-quality 2D/3D DVE and transitions
- You get over 500 realtime effects and transitions including page curls, perspectives, scaling, picture-in-picture, and organic wipes with customizable drop shadows, soft edges, and color borders

Versatile Analog and Digital Input/Output

- Matrox RT2000 supports all the input/output connections you'll need to get the most from your editing system Capture from analog or DV tape. Edit once, then output anywhere. Deliver on tape, Video CD, DVD, or the Internet.
- Y/C and composite video input/output provides capture from analog cameras and output to tape
- On-board 1394 input/output interface performs digital transfers to and from DV tape. Device control and batch capture support are included
- 48 kHz stereo audio input/output genlocked to video ensures perfect lip-sync
- MPEG-2 MP@ML output supports distribution applications such DVD and Video CD authoring
- MPEG-1 & RealVideo output is used for web video streaming

Advanced Productivity Tools

- Matrox RT2000 includes a variety of unique productivity tools to save you countless hours in the editing suite
  - —Matrox Infinite Capture™ overcomes the 2 GB file size limit of Windows 98 by providing seamless capture and playback of unlimited file size within Premiere
  - —Accelerated print-to-disk quickly puts your realtime sequences into a DV or MPEG-2 file for storage, archiving, DVD authoring, etc.
  - —Accelerated image transfer of video frames to system memory over AGP increases performance of host-based software effects
  - —Versatile software codec lets you run multiple VFW applications concurrently so that you can render a project in a compositing or nimation application such as After Effects or 3D Studio MAX, while doing realtime editing on Matrox RT2000
  - —IEEE1394 interface software provides camera/VTR control to facilitate frame-accurate clip logging, batch capture, and print-to-tape
  - —Realtime audio and video preview during DV capture lets you hear and see your material exactly as it is recorded onto your hard disk

Minimum Shipping USA (Except AK & HI) $6.95, up to 1 lb. Add 75¢ for each additional lb. For ins. add 50¢ per $100. © 2000 B&H Photo - Video. Prices are valid subject to supplier prices. Not responsible for typographical errors.

NewTek LightWave [6]

3D Animation, Modeling and Rendering Software

Explosive ideas that test the boundaries of 3D animation deserve a program that can realize them in exciting new ways. Creating worlds that no one's ever seen. Creatures that have never walked the Earth. Special effects, games, web sites - all creations that exist only in your mind. Until now.............

The culmination of over ten years of development, LightWave [6] advances the state-of-the-art in professional 3D animation by adding a comprehensive set of groundbreaking character animation tools, advanced rendering capabilities, a new and improved architecture and a refined work environment. The three traditional areas of 3D, modeling, animating and rendering, have received massive enhancements in the new software. Among the thousands of changes in this completely redesigned system, LightWave [6] boasts real-time subdivision surfaces as a modeling and animation tool, radiosity, caustics, 160-bit floating-point rendering, a hybrid Inverse/Forward Kinematics engine and new character-animation technologies: LightWave, the recognized leader in the film and television industry, provides the most complete feature set of any 3D animation tool available—one of the reasons you can find LightWave 3D in more Hollywood animation suites than any other 3D program. And , LightWave [6] is the only 3D software system to run on Macintosh, Windows NT, Alpha and SGI.

AURA

Powerful Production tool for Animation, Paint and Video Layering

Aura is a one-of-a kind palette of paint tools, compositing, cel animation, special effects, video elements, 2D animation and character generation. Aura blends key features of all of these tools into one superb system. So you can take any digital image… no matter what the source… and add motion, color, 2Dand 3D elements, effects and titles. Throw in rotoscoping, video painting and layering and you can add color and depth to any production. Aura also works seamlessly with LightWave to give you a complete production environment.

Animation, Video and Layering:

- Time-line based animation and video element assembly
- Unlimited layers for stills, animation or video
- Use any frame rate or size for animation, video or web
- Fully animated, full-color brushes
- Keyframe animation and video, motion blur and opacity
- Move any element in x, y or z, heading, pitch or bank space
- Stroke recorder to animate and reproduce brush strokes over time with support for pressure, size and noise parameters
- Complex composite and layered animation
- Real-time overlay and alpha channels for every graphic layer
- Interactive layer rearrangement
- Photoshop layer support and image animation

Drawing, Pen/Brush Control:

- Freehand and polygon shape creations
- Line, spline curve, shape draw with circle, ellipse and rectangle • Filled or outline drawing
- Excellent control of pen, pencil, colored pencil, chalk, crayon, airbrush, watercolor, gouache and oil painting
- Control pen/brush tip, tension, pressure, size, opacity
- Rotoscoping for quick, powerful video painting; draw/paint operations "over time" & animated video brushes "over time"
- Drawing tablet support for Wacom (or compatible) with 256 levels of pressure and speed
- 2400 image processing/drawing combinations
- Text tool supports TrueType fonts and a wide range of text parameters
- Color, chroma, luminance and alpha channel keying

Video Toaster

Tools for Broadcasting and Beyond

With a suite of tools for video creation including all the essential components for video editing, compositing and 2D/3D animation, the Video Toaster is an uncompressed D1 (composite, component, Y/C) Windows NT solution that offers a price/performance equation unmatched in the industry. Unique to the Video Toaster is a breakthrough technology developed by NewTek that turns a standard Pentium II or III processor into a highly specialized video DSP (digital signal processor) for time base correction and other capabilities typically associated with expensive custom chipsets. Superior to systems that cost tens of thousands of dollars the Video Toaster includes LightWave VT 3D animation software, Aura paint and compositing software and in-syncs Speed Razor 4.5 SE video editing software. Leveraging over 12 years of experience as an industry leader and pioneer in the desktop video, 3D, and 2D paint and animation markets, NewTek has created a product that contains award winning tools for creating better than broadcast quality television....at an unbeatable price!

Uncompressed Video— No Compromises

- The Video Toaster offers quality that's second to none. ALL video is ALWAYS stored in its native, uncompressed D1 video format. Unlike other boards that show compression artifacts, the Video Toaster maintains the original, pristine quality no matter how many layers in your project.
- The Video Toaster allows you to manipulate uncompressed video in many ways, including traditional 2D compositing, rotoscoping, 3D animation and modeling and editing. By merging video into a 3D compositing and animation environment, editors will find a new paradigm for video effects and manipulation. The quality and capabilities of the Toaster are comparable or better than digital video editing costing: $50,000 to $100,000 .
- The Toaster provides an uncompressed D1 (composite, component, Y/C) digital video solution typically associated with extremely expensive systems. High-end facilities know that uncompressed digital video is essential to the editing process. Most compression-based systems are relegated to industrial and corporate video segments due to restrictions on the number of layers and quality degradation associated with multi-pass compression. All compressed systems produce unwanted artifacts. Because the Toaster utilizes uncompressed video, you can infinitely layer video without any concern about artifacts. This is the major separation between high-end and mid range systems. The Toaster brings that ultra high-end sophistication to users at levels at an unprecedented price point.

Powerful Editing

- Video Toaster includes in-sync's powerful editing application, Speed Razor 4.5 SE .
- Project timeline that lets you easily create professional video projects containing unlimited layers of video, audio, still image files and animation .
- Comprehensive 2D compositing system
- The ability to capture, edit and output to uncompressed video and other formats, including ASF for video streaming on the Web and multimedia AVIs.
- Graphical workspace for digital media content management.
- Real-time on-screen preview of edits.
- Power character generator (CG).

Toaster Utilities

VT Director—Allows any program that supports cut and paste to display an image on a NTSC or PAL video monitor. Imagine working in Photoshop and being able to display your work on a video monitor with one keyboard shortcut.

ToasterVision—Allows you to preview both video input and output as well as animation on your RGB monitor at 720 x 480 resolution and full frame rate—60 fields per second.

ToasterScope—Keep your video legal as you work on it. The built-in waveform monitor and vectorscope lets you monitor your video input and output.

ToasterKey—Use ToasterKey in Aura to paint in realtime on your video monitor. You can also paint in realtime over live video. Bring frames into Aura from a live input with the frame grabber.

Continuously Upgradeable —Guaranteed Against Obsolesence

The Video Toaster was designed to last for years to come. Similar to the original Video Toaster for Amiga, which is still in production 10 years after its introduction, the Video Toaster utilizes a hardware system that leverages highly tuned software and the systems processor. The true power of the system comes from the proprietary software designed to create magic without the use of expensive video cards or bulky external hardware. By merging software and hardware, the Video Toaster can be upgraded and expanded well beyond current systems. NewTek will be adding modules for a real time 16-input switcher, DV I/O, storyboard editing, and *real-time* chroma keying and 3D DVE.

QUICK DIAL 732

VIDEONICS Effetto Pronto

Digital Video Effects and Compositing System for Macintosh

Effetto Pronto is a powerful combination of compositing and effects software, and a dedicated PCI hardware accelerator card. With a keyframe-based timeline compositing interface, Effetto Pronto blends all of the elements you want in your project.: video, graphics, 3D animation and anti-aliased text from the CG module. It even includes an audio track so you can animate to the beat of the music.

- Work with an unlimited number of tracks at any resolution
- Effetto is resolution independent so you can mix and match a variety of formats and seamlessly bring them all together
- Color correction, chroma and luma keying, 3D warps with perspective and 3D animatable lights.
- Advanced character generator offers unlimited text overlap, free-form text positioning, point and click typing, font and color palette thumbnails, drop shadows and glows and much more.
- Provides true 3D perspectives for your work. Any object can be rotated or warped on its X, Y, or Z axis, and can be positioned anywhere in 3D space.

ICE. Final Effects Complete

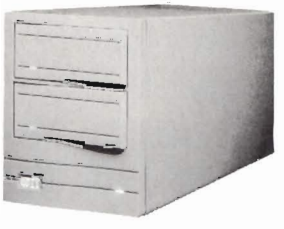
Final Effects Complete is a premium set of 60 motion graphics effects' plug-ins for Adobe After Effects which create professional special effects for film, video and other digital video production. Final Effects Complete offers the ability to generate rain, snow, fire, smoke, bubbles, liquid mercury distortions, explosions, 3D particles, liquid displacement and lighting effects, a multitude of stylistic transitions and other video effects.

- 60 Hollywood-style filters and transitions– the same ones used in MTV and Fox promos.
- Full-featured 2-D and 3-D particle system. Create rain, smoke, fire, bubbles, ball action, confetti, jet trails, water ripples, cubes, star bursts, hair, liquid mercury blobs, fireworks and more.
- Particle World, an amazing 3D particle system with Z-depth and full camera tilt movement, lets you spray particle objects around your 2D image layers.
- Design unlimited effect combinations with interactive control over subtle compositing details. Effects can be animated over time to add even more sophistication.
- Incredible one-of-a-kind stylistic effects. Burn your image away like melting film. Paint in brush strokes with a glue gun. Scatterize every pixel of an image. Create psychedelic flowing backgrounds and kaleidoscope patterns. Flip your image like a page turning in a book to reveal another image. Materialize an image into glass or a blobby substance over time.
- Dramatic or subtle lighting with spotlights, multi-colored light rays, light sweeps and light bursts. Time controls for echo and motion blurring effects.
- Bend, slant, split, ripple, stretch, tile, twist and crumple your image or movie in an infinite number of ways. Turn them into a movable sphere or cylinder, rotate or manipulate them in any imaginable perspective without destructive clipping. The possibilities are endless.
- Remove tell-tale wires from blue screens. Create alpha maps and sepia tones, composite between effect and source, and even rotate between color values.

QUICK DIAL 731

CTI

DISK ARRAYS for Mac and Windows NT



Video applications need extremely high data throughput to ensure high quality video. Using Ultra SCSI technology and Seagate Ultra SCSI LVD disk drives. CTI disk arrays provide high data of up to 80 MB/sec to ensure smooth clean video without dropped frames. Especially designed for audio and video applications, Seagate disk drives employ embedded servo technology, eliminating the need for thermal recalibration. With a series of disk arrays fully tested for Windows NT and Mac PCI systems, CTI delivers the fexibility, performance and reliability you need at very competitive pricing. Available in fixed and removable configurations. CTI arrays range from 18 GB to 180 GB per system and up to 1500 GB when daisy-chained. Among the fastest in the industry, CTI Disk Arrays for Macintosh and PC are ideal for video and pre-press or any other application where absolute speed is essential. All solutions are based on world-proven Seagate Barracuda or Cheetah hard drives, and all feature steel chassis, extra capacity cooling fan, push button SCSI selectors and Ultra SCSI performance. All include a five year limited warranty.

- Raid level 0 for high-speed data striping
- Push button SCSI ID selector
- Includes Seagate FAST SCSI LVD high performance drives
- Multiple large power supplies
- Efficient cooling and airflow
- Available in two and four bay towers (fixed and removable)
- All arrays include 5-year limited warranty

DISK ARRAYS (DOES NOT INCLUOE SCSI CARD)		
CTB18GBA	Barracuda 18GB (2X9) SCSI LVD array	$999.95
CTB36GBA	Barracuda 36GB (2x18) SCSI LVD array	$1,429.95
CTB72GBA	Barracuda 72GB (2x36) SCSI LVD array	$2,499.95
CTB100GBA	Barracuda 100GB (2x50) SCSI LVD array	$2,599.95
CTC18GBA	Cheetah 18GB (2X9) SCSI LVD array	$1,259.95
CTC36GBA	Cheetah 36GB (2x18) SCSI LVD array	$1,899.95
CTC72GBA	Cheetah 72GB (2x36) SCSI LVD array	$3,069.95

DISK ARRAYS (INCLUDING SCSI CARD)		PC	MAC
CTB18GBAP/M	Barracuda 18GB (2X9) SCSI LVD array with SCSI card	$1,279.95	$1,449.95
CTB36GBA2P/M	Barracuda 36GB (2x18) SCSI LVD array with SCSI card	$1,699.95	$1,869.95
CTB36GBA4P/M	Barracuda 36GB (4x9) SCSI LVD array with SCSI card	$2,499.95	$2,699.95
CTB72GBA2P/M	Barracuda 72GB (2x36) SCSI LVD array with SCSI card	$2,769.95	$2,949.95
CTB72GBA4P/M	Barracuda 72GB (4x18) SCSI LVD array with SCSI card	$3,379.95	$3,549.95
CTB100GBA2P/M	Barracuda 100GB (2x50) SCSI LVD array with SCSI card	$2,879.95	$3,049.95
CTB144GBA4P/M	Barracuda 144GB (4x36) SCSI LVD array with SCSI card	$5,499.95	$5,699.95
CTB200GBA4P/M	Barracuda 200GB (4x50) SCSI LVD array with SCSI card	$5,699.95	$5,899.95
CTC1BGBAP/M	Cheetah 18GB (2X9) SCSI LVD array with SCSI card	$1,529.95	$1,699.95
CTC36GBA2P/M	Cheetah 36GB (2x18) SCSI LVD array with SCSI card	$2,159.95	$2,329.95
CTC36GBA4P/M	Cheetah 36GB (4x9) SCSI LVD array with SCSI card	$3,049.95	$3,499.95
CTC72GBA2P/M	Cheetah 72GB (2x36) SCSI LVD array with SCSI card	$3,299.95	$3,199.95
CTC72GBA4P/M	Cheetah 72GB (4x18) SCSI LVD array with SCSI card	$4,279.95	$4,479.95
CTC144GBA4P/M	Cheetah 144GB (4x36) SCSI LVD array with SCSI card	$6,599.95	$6,799.95

• • 35 ➤

6. That's half of the object finished! You've got a right triangle. Now create the other triangle by following these abbreviated steps:

Go back to the first layer by hitting the [1] key.

Select three points. This time omit the upper leftmost point.

Hit [c] to copy the points.

Hit [3] on the keyboard to go to the third layer.

Hit [v] to paste the points.

Again, highlight the points in a clockwise manner. (If you select points counterclockwise, the face of the polygon will be flipped.) Press [p], the keyboard shortcut for making a polygon.

Follow step 5 again to create another beveled triangle. Make sure to name the surfaces correctly.

7. Select [Polygon] from the bottom left of the screen.

Hit [x] - this will cut out your entire triangle and put it into memory.

Hit [2]- you should see your first triangle.

Hit [v] - this will paste down the second triangle next to the first.

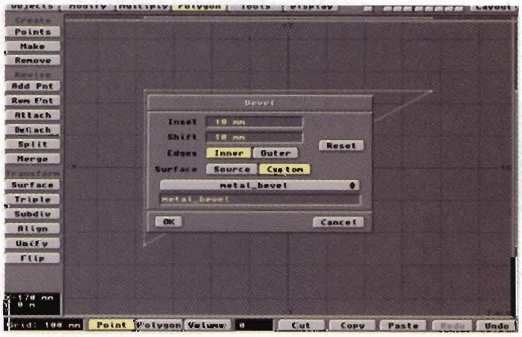
(Figure 7)

In the [Objects] panel, go to Fetch [Save] to store your object on the hard drive. Name it "diag_in_doors."

Cool! We're almost done! You can see in Figure 8 that I chose to "carve" some text into the object using the Boolean tool. I will not explain Boolean tools in this article. (Editor's note – for a primer on Boolean operations, see Jared Brookes' tutorial on page 28.)

A couple more steps - the devil's in the details!

(Figure 6)



Bevel

Inset 10 mm

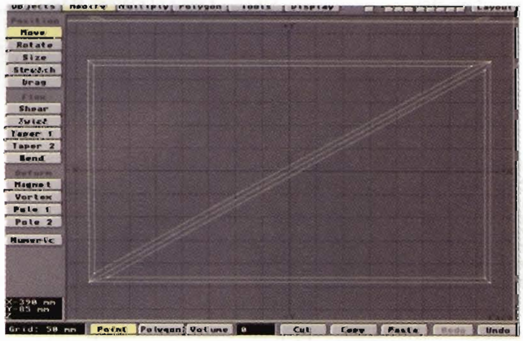
Shift 10 mm

Edges Inner Outer

Surface Source Custom

metal_bevel

Objects
Modify
Multiply
Polygon
Tools
Display
Layout
Points
Make
Remove
Add Pnt
Rem Pnt
Attach
Detach
Split
Merge
Surface
Triple
Subdiv
Align
Unify
Flip
Reset
OK
Cancel
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo



Move
Rotate
Size
Stretch
Drag
Shear
Twist
Taper 1
Taper 2
Bend
Magnet
Vortex
Pole 1
Pole 2
Numeric
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo

(Figure 7)

8. Make sure that you have [Polygon] selected at the bottom and hit [w] to bring up the Polygon Statistics window. (Figure 9)

Near the bottom, you'll see a pop up with surface names in it. Pick "metal_bevel."

Click the [+] sign next to the "with Surface" field. (You should see that 6 polygons have this surface name.)

Press [OK]. All of the polygons with that surface name should be highlighted.

Hit [x] on the keyboard, then immediately hit [v]. You have just cut and pasted back all the bevels. The procedure makes the bevels look sharper under LightWave's lights.

[Save] the object using the same name, "diag_in_doors."

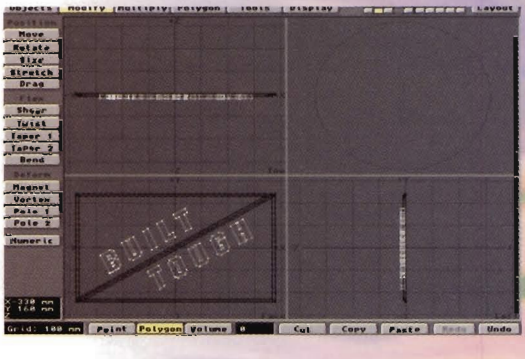
Our work in Modeler is completed, but we are not done yet! We still have to render our object in Layout.

9. To leave Modeler, click [Layout] in the upper right corner.

In Layout, we will texture our model and set it up in front of the virtual camera to be photographed.

In the [Objects] menu, [Load Object] "diag_in_doors" from the hard drive.

(Figure 8)



Objects
Modify
Multiply
Polygon
Tools
Display
Layout
Move
Rotate
Size
Stretch
Drag
Shear
Twist
Taper 1
Taper 2
Bend
Magnet
Vortex
Pole 1
Pole 2
Numeric
BUILT
TOUGH
Point
Polygon
Volume
Cut
Copy
Paste
Redo
Undo

Click [Continue] to return to the Layout screen.

Under View, click [Camera]. Next, under Edit, highlight [Objects]. Under Mouse, [Move] should be highlighted. Make sure only [Z] is on.

Position the object to fill the whole frame right to left. You may need to [Stretch] the object slightly on the [Y] axis to fill the frame from bottom to top. (My Y setting was 1.165.)

Hit [Enter] twice. This locks the object into position. (Figure 10)

10. Go to the [Camera] panel and double-check the settings:

Medium Res Video
D2
752 x 480
Antialiasing LOW
Adaptive Sampling 30

11. Now, we texture the model. In this tutorial, we will be loading a surface included with the Toaster. Be creative with your texturing. Since these doors look industrial to me, I think that some burnished metal should do the trick.

In the [Surfaces] panel, choose "metal" from the "Current Surface" pop up list at the top.

[Load Surface] Choose "BrushedMetal." (In may be located in a "metals" directory.)

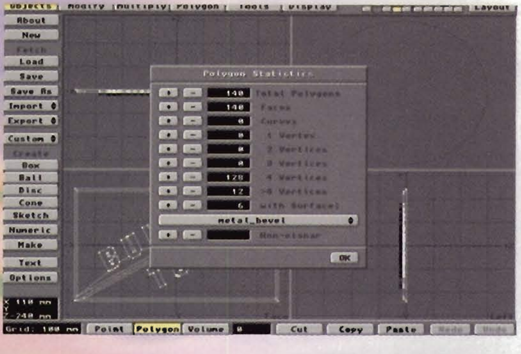
Adjust the [Surface Color] settings to your liking. I made mine a slight dark blue tint.

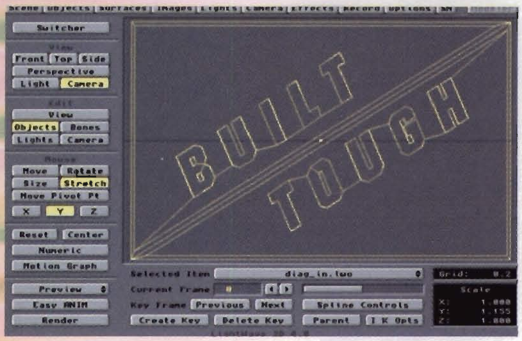
12. Select "metal_bevel" from the Current Surface pop up list.

[Load Surface] "BrushedMetal" again.

Change the color if you like. I made mine a

(Figure 9)


Objects
Modify
Multiply
Polygon
Tools
Display
Layout
About
New
Load
Save
Save As
Import
Export
Custom
Box
Ball
Disc
Cone
Sketch
Numeric
Make
Text
Options
Polygon Statistics
Total Polygons
Faces
Curves
metal_bevel
OK
Point
Polygon
Volume
Cut
Copy
Paste


Switcher
Front
Top
Side
Perspective
Light
Camera
View
Objects
Bones
Lights
Camera
Move
Rotate
Size
Stretch
Move Pivot Pt
X
Y
Z
Reset
Center
Numeric
Motion Graph
Preview
Easy ANIM
Render
BUILT
TOUGH
Selected Item
diag_in.lwo
Current Frame
Key Frame
Previous
Next
Spline Controls
Create Key
Delete Key
Parent
I K Opts
Grid:
Scale

(Figure10)

lighter blue.

Press [Continue].

13. Go to the [Objects] panel and click [Save Object].

Once you texture the model, you must resave it from Layout. This saves the texture settings with the model. If you change the texture settings after this step, you will have to save the object again.

Press [Continue].

Go to the [Scene] panel and click [Save Scene]. I called mine "DiagDoor."

Press [Continue].

14. If you are in 4x, go to the [Record] panel before you render the scene. About halfway down, press [Save Framestore]. Name the framestore, "DiagIcon."

Under Render Scene:

First Frame	1
Last Frame	1
Frame Step	1

Press [Continue].

Now render out this frame to a favorite place on your hard drive. If you are using a 3x Toaster, do not forget to name your framestore using the naming convention ###.fs.filename.

You may want to try a test render without much texturing or antialiasing. I found that the wipes do not animate very precisely. Sometimes, I have to monkey with the placement of the object to get the final rendered image's seam to match with the wipe.

You can see my final render (p. 34) is ready for heavy duty editing.

After the frame renders to your satisfaction, press [Switcher] to leave LightWave.

15. You now can close down LightWave to save RAM. Hold down the [Shift] key and select [LightWave] from the [Programs] pull down. When you release the mouse, LightWave will be unloaded from memory.

16. Load up your new framestore into one of your DV buffers. It doesn't matter which one. Let your video play, then at the appropriate moment, trigger the [Diag In] transition to bring your image in. Voilà, you have created a whole new look to an old transition!

Just use the [Diag Out] to wipe it out. If you are editing on a conventional linear system, you can bridge an edit this way. You can use this transition to bring in the image, stop the edit, and then wipe it out on the second edit. Slick!

If you are editing on the Flyer, build a sequence of a video clip, [Diag In], framestore, [Diag Out], and another video clip. Wipe on, wipe off. To avoid the usually slow load times associated with bringing framestores on and off, use RenderFX to permanently burn the sequence to the hard drive.

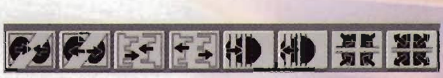
Here are some wipes that I think are good candidates for this procedure. (Figure 12)

These are not the only ones suitable for this process, but they are a good starting point. The organic edged effects will need a little extra work. If the design of your chosen digital wipe is not simple geometry, you will have to capture a frame of the transition in its nearly completed state.

If you have a Flyer, RenderFX (also included in the Millennium collection) makes short work of this. With RenderFX, you can render the realtime transition into a FlyerClip. Then, simply choose a frame with the partially completed transition. Import this frame into Modeler as a background image and use it as a template to create your polygons. I would follow these steps to create a custom frame for the "Jigsaw Puzzle" wipe.

Also, you could use a second Video Toaster to capture the output of the first. Just do a framegrab of a transition that has been pulled by hand to the right point. Again, bring the framestore into Modeler as a background image and start creating points and polygons.

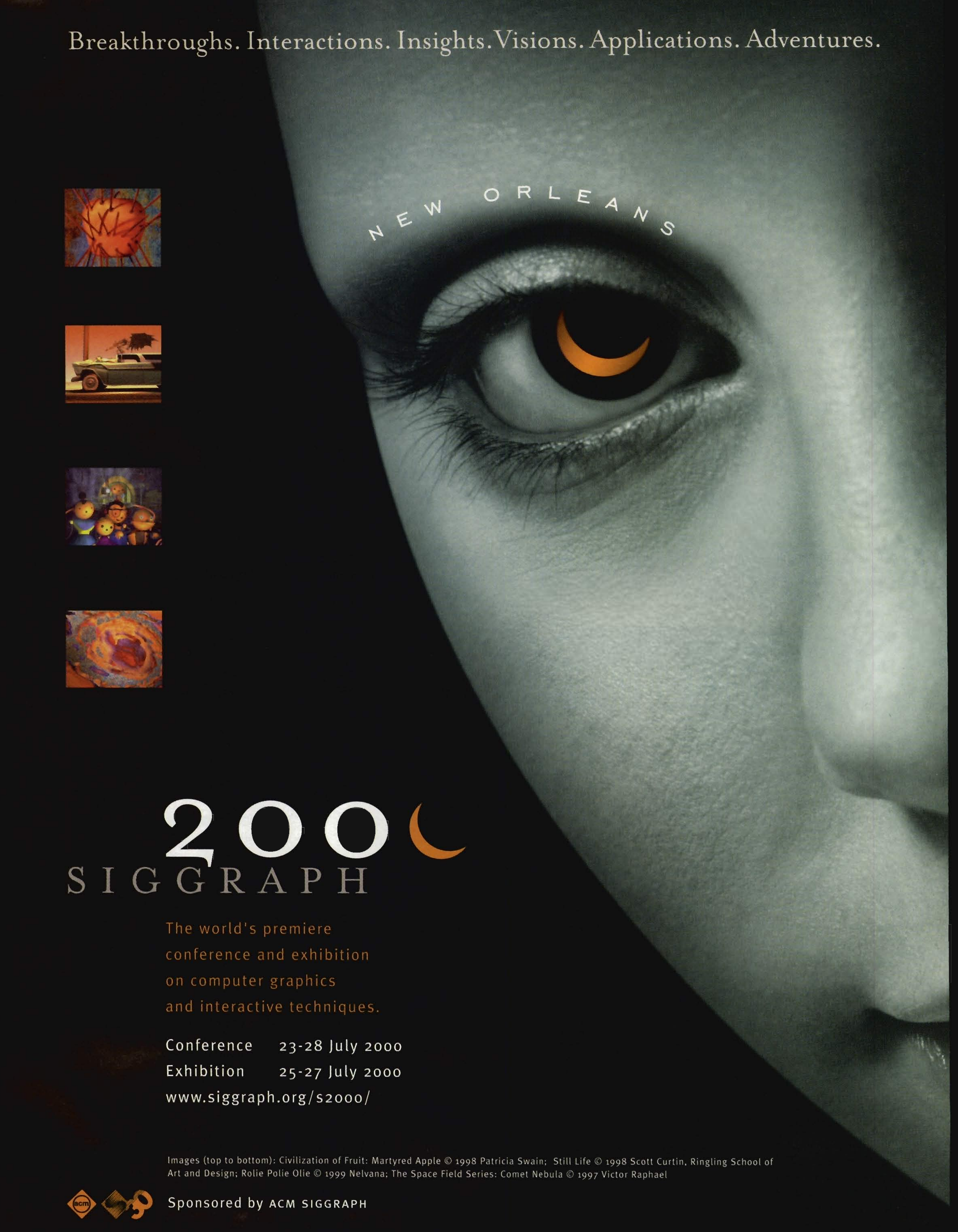
I was able to create the images that we used in this tutorial in well under an hour. By keeping the design simple, we do not burden the Amiga unnecessarily; and we stick our noses into LightWave as briefly as possible. I usually charge $95 an hour for graphics creation. In that hour, you can easily create one of these image-based transitions expressly for a client.



(Figure 12)

Once you have the basic image, you can also create variants to use as chapter headings throughout the video. If the budget does not allow for elaborate wipe creations, these hand-made effects are an easy way to add slickness to your product. Even Toaster 2000 users can infuse a little color and creativity into their programs. I especially hope that this article inspires the Toaster 2000 troops to march on.

Bohus Blahut is the director of The Vantage Point and the creator of the Catalyzer tutorial video series. You can email him at bohus@xnet.com



Breakthroughs. Interactions. Insights. Visions. Applications. Adventures.

NEW ORLEANS

2000

SIGGRAPH

The world's premiere
conference and exhibition
on computer graphics
and interactive techniques.

Conference 23-28 July 2000
Exhibition 25-27 July 2000
www.siggraph.org/s2000/

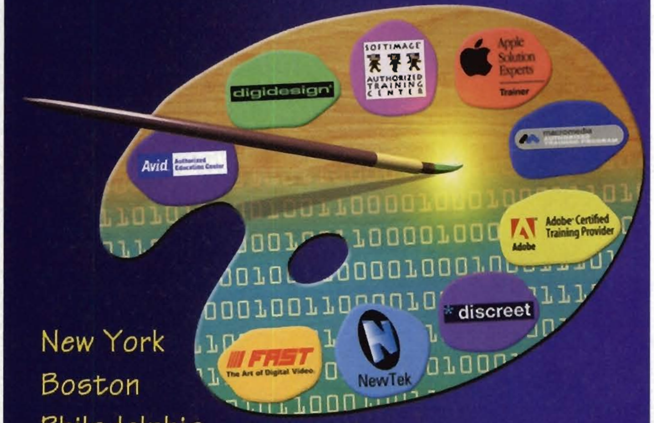
Images (top to bottom): Civilization of Fruit: Martyred Apple © 1998 Patricia Swain; Still Life © 1998 Scott Curtin, Ringling School of Art and Design; Rolie Polie Olie © 1999 Nelvana; The Space Field Series: Comet Nebula © 1997 Victor Raphael

Sponsored by ACM SIGGRAPH

Web #110

Future Media Concepts

Training a new generation of Digital Artists


digidesign
SOFTIMAGE AUTHORIZED TRAINING CENTER
Apple Solution Experts Trainer
Avid Authorized Education Center
macromedia
Adobe Certified Training Provider
discreet
FAST The Art of Digital Video
NewTek

New York
Boston
Philadelphia

1-877-FMC-training

www.FMCtraining.com

Web #111

VertiBevel

Power modeling tool for LightWave 3D

- Bevel multiple polygons as one.
- Create multiple-step bevels.
- Interactive Bevel Designer.
- Build Powerful hot-keys.
- Works with MetaNURBS.
- And much more...

Only
$149.95

121 Sweet Ave.
Moscow, ID 83843
(208) 885-5168

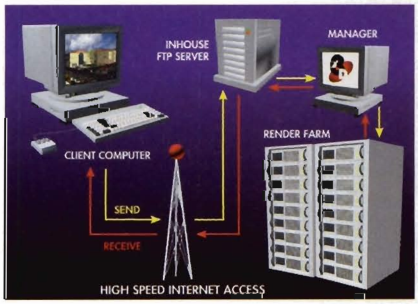
SHEKINAH studios

www.skstudios.com
ICQ# 32005450
fax: (208) 885-3803

Image courtesy of Foundation Imaging. Gracie designed by Steve Burg, modeled by Jack Cheng and Steve Burg. Cityscape modeled by Errol Lanier. Created using VertiBevel.

Web #112

A Fast & Affordable 3D Render Farm With Full T1 Internet Access.


INHOUSE FTP SERVER
MANAGER
CLIENT COMPUTER
RENDER FARM
SEND
RECEIVE
HIGH SPEED INTERNET ACCESS

- LightWave, 3D Studio MAX & After Effects
- 60 Processors/30 Networked Dual PII & PIII
- T1 Internet Access & File Submissions

We are also an expanding render farm that aggressively meets client needs. Whether its adding more computers to meet deadlines, configuring our network to match your own, purchasing other softwares or plug-ins. Whatever the need we will try to our utmost to fulfill your demands!

Visit our website at: www.ren3d.com
email: info@ren3d.com

Tel: (714) 744-9542
Fax: (714) 744-4364

r3D, LLC
1407 North Batavia, #202
Orange, CA 92867

render FARM

LightWave • Studio MAX • After Effects

Web #113

RealFlow

FLUID DYNAMICS SIMULATOR

BOTH AVAILABLE FOR LIGHTWAVE, MAX, SOFTIMAGE AND MAYA

RealWave

OBJECT-FLOATING SIMULATOR
WAVE GENERATOR

NEXT LIMIT

www.realflow.com
info@nextlimit.com
Phone +34 91 5542170
Fax +34 91 5540657

Web #114

Product information is available through the InfoTek service on www.newtekniques.com

Fly thru 2000

with Flyer® plug-ins by OZware

✓ Co-Pilot - The Movie
Hours of Aussie's tips on tape

✓ Co-Pilot Audio
Automate your music mixing

✓ Co-Pilot Video
Speed up your editing day

✓ Fast Frames
Clip-painting magic

✓ Hot Disk
Add the hottest & newest tools

✓ Multicam Editor (w/video)
Non-linear multicam

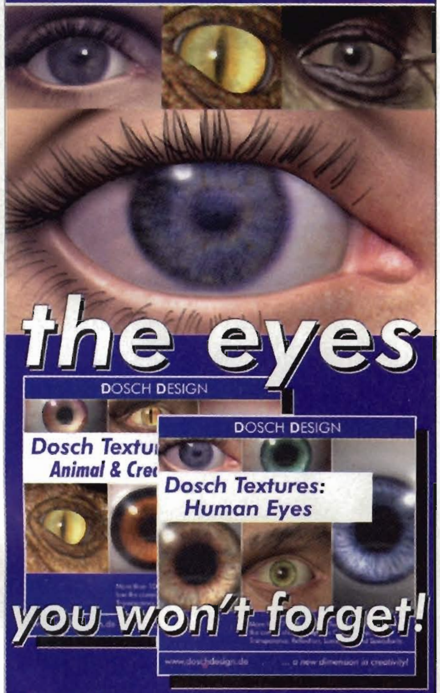
✓ Note Maker (w/video)
Create custom notes

✓ Short Cuts (w/video)
Cut down your digitizing time

Keep updated at
www.ozware.net
360-805-0148
21230 Meadow Lake Rd.

Web #115

DOSCH DESIGN



NEW! DOSCH DESIGN US Shipping-Location:
call (814) 943-2807 or order directly through our
Secure Online Store: http:www.doschdesign.de

DOSCH DESIGN - Germany - info@doschdesign.de
Phone +49(0)9391-915853 - Fax +49(0)9391-915854

www.doschdesign.de

Web #116

NewTekniques

Say You Saw It In

LIGHTWAVE - ALL PLATFORMS
VIDEO & ANIMATION HQ
TOASTER-NT
LIGHTWAVE 6.0

MONITORS - VIDEO - MULTIMEDIA

NEW! 2.0
AURA
Preorder now!

Special!
AURA BUNDLE
AURA Plus 3 Video Tapes

THE LIVELY COMPUTER

1283 E.Main Street
El Cajon CA 92021
Voice:
(619) 440-3311
Fax:
(619) 440-0611
Visit us at

Hardware & Software:

Newtek Direct Dealer
Video Toaster/Flyer upgrades
LightWave Plug-ins & tutorials
Ozware Hot Disk,Short Cuts
Visual Inspiration AURA FX
Nova Design ImageFX 4.0,
Aladdin and Millenium
MITSUBISHI 19" monitors
Iiyama Flat Screen monitors
Addenda cable/Scsi products
Desktop Images Video tapes
Seagate harddrives a/v ready
Eyelight Tornado 3d

REPAIR - UPGRADES - NETWORKING

www.livelycomputer.com
NONLINEAR EDITING SYSTEMS

Web #117

Space Wars
Digital Effects Kit

- 3D Models
- Explosions & Fire Sequences
- Textures & Backgrounds
- Sound Effects

It's not just an object collection, It's a 3D Effects SOLUTION!

Only $129

Digital Soundstage
P.O. Box 86824 Tucson, AZ 85754
(520) 743-2900
www.digitalsoundstage.com

Web #118

Amazing ImageFX tutorial videos!

Breathe Fire into Your Graphics
CATALYZER
CALL NOW! and learn with the master!
Download our free PanCanvas Motion Control Demo!

"A+...clear and precise ...many great ideas...get these tapes yourself. You won't regret it!"
- Cecilia, NewTekniques Review

Toastmaster columnist Bohus Blahut leads you step-by-step through show-stopping projects! You will apply these techniques to your creative work over and over. Each Catalyzer video includes floppy!

Volume 3: Layers & Stuff - Master layers, Cinemorph, scanning, printing, more! *Only $49.95*

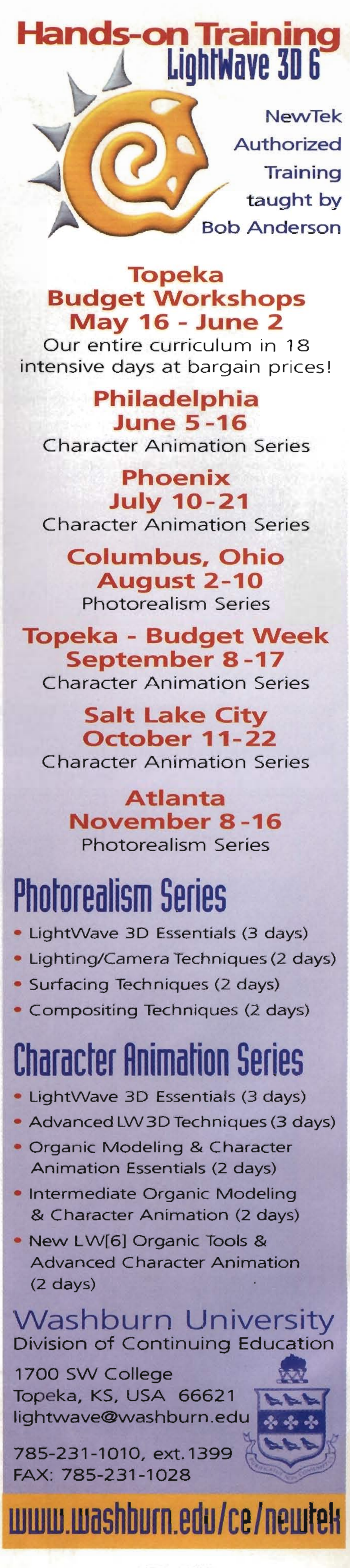
Vol.2: "Compositing" Alpha channels, rotoscoping, green screens, cool modes! *Only $39.95*

Volume 1: Animate lightning and other effects, do text tricks, master AutoFX and IMP! *Only $39.95*

ORDER TODAY! (773)465-5158 - Visa, MC accepted. Send checks or MOs payable to Legacy Maker, Inc., PO Box 60711, Chicago, IL 60660. Shipping and handling is $5.95 for up to two items; $1 each add'l item. IL residents add 8.5% tax.

www.LegacyMakerInc.com

Web #119



Hands-on Training
LightWave 3D 6

NewTek Authorized Training taught by Bob Anderson

Topeka
Budget Workshops
May 16 - June 2
Our entire curriculum in 18 intensive days at bargain prices!

Philadelphia
June 5 - 16
Character Animation Series

Phoenix
July 10 - 21
Character Animation Series

Columbus, Ohio
August 2 - 10
Photorealism Series

Topeka - Budget Week
September 8 - 17
Character Animation Series

Salt Lake City
October 11 - 22
Character Animation Series

Atlanta
November 8 - 16
Photorealism Series

Photorealism Series
- LightWave 3D Essentials (3 days)
- Lighting/Camera Techniques (2 days)
- Surfacing Techniques (2 days)
- Compositing Techniques (2 days)

Character Animation Series
- LightWave 3D Essentials (3 days)
- Advanced LW 3D Techniques (3 days)
- Organic Modeling & Character Animation Essentials (2 days)
- Intermediate Organic Modeling & Character Animation (2 days)
- New LW[6] Organic Tools & Advanced Character Animation (2 days)

Washburn University
Division of Continuing Education
1700 SW College
Topeka, KS, USA 66621
lightwave@washburn.edu

785-231-1010, ext. 1399
FAX: 785-231-1028

www.washburn.edu/ce/newtek

Web #120

RENDERING ▪ RENDERING
300 PROCESSORS
SWALES
RENDERING SERVICE
(626) 351-6967
PASADENA, CALIFORNIA
BELTSVILLE, MARYLAND
▪ 256-1024 MB RAM/CPU ▪
T1 INTERNET CONNECTION
$3.67
As Low As
$3.67/CPU HOUR
NETWORK
RENDERING
LIGHTWAVE 3D
3D STUDIO MAX
RENDER@SWALES.COM
WWW.SWALES.COM/RENDER
NAPOLEON ▪ NEW YORK

Web #121

Canada's NewTek Centre
We are proud to be the Premiere NewTek Products dealer in Canada.

NewTek
2000 Canada
Medea
Video Raid
Dynamic
Plugins
Juice
Content
matrox
Video Cards
in-sync
Editing
IMAGES
Tutorials
SCALA
Publishing

FREE BORIS FX WITH EVERY TOASTER NT PURCHASE
LIGHTWAVE [6]
CUSTOM DIGITAL VIDEO SYSTEMS DESIGN
PC AND AMIGA TECHNICAL SERVICES

VideoLink Inc.
animation canada
www.videolink.ca
In Canada call: 1-416-690-1690
Toll free: 1-800-567-8481

Web #122

FUTURE FANTASTIC

Genesis V2 PRO

The Ultimate Visual FX Plugin For Lightwave and Photoshop

Genesis V2 PRO

Prepare to take your visual FX to the next level! Genesis V2 PRO delivers the most versatile and complete visual effects package ever, with infinite possibilities for creating stunning lens flares, glows, fire, smoke, explosions and much, much more. Genesis V2 PRO is a plugin available for Photoshop and Lightwave that comes with more than 200 special FX files thet can be combined and used with your images and animations* to produce spectacular results. Not enough? Then create your own FX from scratch using the powerful set of tools provided in the new and improved interface.

Take a look at these features:

- Create effects by compositing an unlimited number of elements.
- Real time previews to provide visual feedback as you work.
- Huge variety of rendering, compositing and image displacement modes, including blurs, colourization effects, lighting and many more.
- Every variable that makes up an effect is editable.
- Advanced parametric fractal noise algorithms for the ultimate in organic effects.
- Powerful morphing controls to create multiple unique elements quickly.
- Animate all element parameters over time, including size, rotation, age, intensity, alpha channel and colourization of effects*

Whether you are thirsting to create amazing visual FX for film, television, games or the internet, Genesis V2 PRO will deliver stunning results with complete resolution independence and final rendering performed to the highest possible quality.

Genesis V2 PRO is the plugin you have been waiting for!

** Animation feature only available in the Lightwave version*

Before
After
Before
GenesisPRO
After
GenesisPRO

For a **FREE** evaluation version visit our website a:
www.futurefantastic.com
Genesis V2 PRO is available through all good plugin resellers

Web #123

T.S. Computers & Video
11300 Hartland Street North Hollywood CA 91605
818-760-4445 www.vgn.com Fax 818-505-1811
Video Editing and Animation Specialists

T.S. Computers has been fufilling the needs of video and animation professionals for over fifteen years. As a full-service dealer, we will provide you with the tools you need to get the job done!

We are fully authorized dealers for:

NewTek DIGITAL FUSION DPS™ PINNACLE SYSTEMS

Yes, we build turn-key systems !
Yes, we can upgrade your current video editing system !
Yes, we provide Internet services!
Yes, we sell and service Amigas !

Toaster NT
dpsReality™ Studio Digital Disk Recorder
dpsVelocity™ FASTER, SHARPER, EASIER EDITS

Web #124

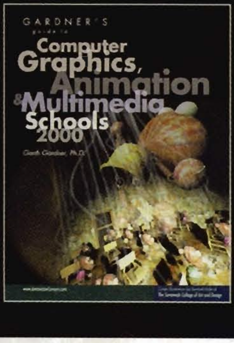
INTERNSHIPS

SCHOOLS

Gardner's Guide to Internships in New Media: Computer Graphics, Animation, Multimedia is a new book that profiles hundreds of companies offering internships in animation, TV production, computer graphics, multimedia and other related industries.
$34.95
ISBN: 0-9661075-3-5

GARDNER'S guide to
INTERNSHIPS
in
New
Media
Computer Graphics Animation Multimedia GoGardner.com
Garth Gardner, Ph.D

Gardner's Guide to Computer Graphics, Animation & Multimedia Schools 2000 is the most comprehensive and up-to-date book on computer graphics schools! This book profiles over 450 colleges and universities in the United States.
$23.95
ISBN: 0-9661075-1-9



GGC Inc. / Publishing

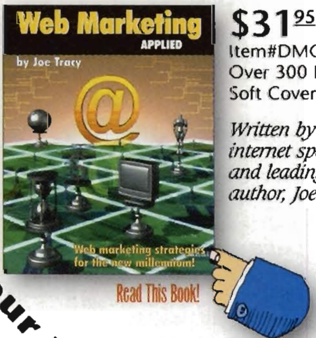
www.GoGardner.com

Distributed by Ingram Book Company. Available at Amazon.com and all other Bookstores.

Call 1-800-968-9622 to order or 703-354-8278 for more information.

Web #125

You're *Open* for **Business** on the Web



$31.95
Item#DMGB100
Over 300 Pages
Soft Cover

Written by internet specialist and leading author, Joe Tracy

...What's Your Next Move?

Web Marketing Applied, Web Marketing Strategies for the New Millennium, is the must-have book for Webmasters, Web marketers, Web developers...or anyone involved in the marketing or promotion of a Website. Every chapter is filled with powerful ideas to help you drive traffic to your site. Excellent for any industry, business or profession.

Master Your Next Move with Success!
Call 1-800-598-6008
Fax: 218-723-9146 • Outside the U.S. call 218-723-9180
Please mention code 950918NT when ordering
Visit our Website and order online at
www.advanstarbooks.com/webmarketing/

$20 CD-ROM Sale!

DinosaursROM - 10 Dinosaur objects for animation with Bones. (was $120, now $20!)

520 Photoreal Seamless Textures - 520 Building, Vehicle, Door & Window Seamless Textures - $20

SurfacesROM - 300 Seamless Building Textures including Rock,Wood, etc $20

DinoROM + SurfacesROM + 520 Photoreal Textures Bundle = $45

LIGHT-ROM GOLD
LIGHT-ROM 4 (2 CD set)
LIGHT-ROM 6
LIGHT-ROM 7
LIGHT-ROM 8
3D ROM #2

All LIGHT-ROMs feature Lightwave objects that are compatible with any version of Lightwave on any computer platform. 3D ROM #2 includes 200 Lightwave objects.

All LIGHT-ROMs & 3D ROMs are $12 each, 2 for $20 or all 6 for $45!

L.E.N.Y. #1 & #2 (Lightwave Training) Bundle is only $20 total (3 CDs) with any purchase of $45 or more!

All CD-ROMs in this ad are only $89 + $10 shipping!

Very limited supplies! Once sold out, there will not be anymore made!

Graphic Detail Inc., 4556 South 3rd St., Louisville, Ky. 40214 USA ~ Mastercard & Visa accepted
Shipping is $4.95 for U.S., Canada & Mexico - $7.95 International ~ Bundle shipping is extra.
1-800-265-4041 / 502-363-2986 (voice & fax) / www.lightrom.com

LIGHT-ROM is a trademark of Graphic Detail, all other trademarks are the properties of their respective owners.

Web #126

AMITRACE
COMPUTER SYSTEMS
www.acsvideo.com

Authorized dealer for Play, Applied Magic, Media 100, Scala and NewTek

Authorized dealer for all NewTek products:

Lightwave 3D 6.0 and Video Toaster NT are in stock! Please call for our special pricing.

Also an authorized dealer of the following:

Trinity
ScreenPlay
Media 100 Mac/NT
Scala Infochannel

Media 100

In business since 1987, ACS Video is your one stop shop for all digital video hardware, related accessories and service. We specialize in Amiga and Video Toaster repairs and upgrades. We keep all parts in stock for fast turnaround. All systems are available for demo by appointment.

5344 Jimmy Carter Blvd.
Norcross, GA 30093
(770) 263-9190 1-800-962-4489
Fax 770-263-7852 www.acsvideo.com

Web #127

ADVERTISERS

COMPANY	PG#	RSN#
ACS Computer	47	127
Archvision	Cv.3	128
B & H Photo Video	36-37	108
B & H Photo Video	38-39	109
Carrera/Microway	Cv.2	103
Desktop Images	13	106
Digital Sound Stage	45	118
Dosch Design	44	116
Easy Upgrades	5	105
Future Fantastic	46	123
Future Media Concepts	43	111
GGC Inc.	46	125
Graphic Detail	47	126
Legacy Maker Inc.	45	119
Lively Computers	44	117
NewTek, Inc.	3	104
NewTek, Inc.	Cv.4	102
Next Limit SL	43	114
Ozware	44	115
r3d	43	113
Safe Harbor Computers	30-31	107
Shekinah Studios	43	112
Siggraph 2000	42	110
Station X Studios	21	101
Swales Aerospace	45	121
T S Computers	46	124
Videolink, Inc.	45	122
Washburn University	45	120

Product information is available through the InfoTek service on **www.newtekniques.com**

MOJO

MUSINGS FROM OUR ACE LIGHTWAVE ANIMATOR

WHAT ARE YOU
WAITING FOR. . .
THE NEXT MILLENNIUM?

by Mojo

KICK ME

We're All Running Out of Excuses

My friend Mara and I have been kicking each other in the pants a lot lately. She's an aspiring singer/songwriter with dreams of seeing her new album at Tower Records, and I'm an aspiring filmmaker with dreams of seeing my movie premiering at the Chinese. As far as I'm concerned, she's got so much talent she should have won a Grammy by now - and she wonders why that Emmy sitting in my house is for Special Effects and not for Directing.

The answer? We're lazy. People like us always have an excuse for why we haven't hit the big time yet. This isn't to say Mara isn't working hard at her career; she plays gigs all over Hollywood and is trying to put a band together - but she'll be the first to admit she should spend less time watching *South Park* and more time writing new songs. I do my best to encourage her and, in return, she does her best to keep her boot firmly planted in my behind.

Alas, it will take much more than regular doses of Mara's Italian Leather Suppositories to get me moving in the right direction. In the end, we all know that the only person who is going to get us to stop procrastinating and making excuses is ourselves.

I'd be willing to bet that a lot of people reading this are in the same boat. We all have dreams of 'making it,' yet no matter how much easier the world makes it for us we still find a reason to put it off.

I've always loved making movies, but ever since I got out of film school I can count the number of days I've spent in production on my own project with one page of a calendar. At first you could say I had legitimate excuses (I *did* have to find some way to pay the bills). I was very fortunate to be getting into 3D animation just as the field lifted off the ground, for I soon found myself in California making decent money at a really fun job.

However, in the back of my mind, I knew I still wanted to pick up a camera and make movies, so I kept an eye on the world of independent production. I figured once the video cameras got good enough, I'd buy one and get the ball rolling. But as the years went by and digital video was introduced, I was still spending money on toys like video projectors and wasting my free time by web surfing, hanging out and other non-productive endeavors (hey I work hard and deserve to enjoy my free time, right?).

As good as the new cameras were, though; there was still no way to really edit your movies. Non linear editing equipment was very expensive and, well, what's the point of being able to capture really nice footage if you can't do anything with it? No, the world was not quite ready for me to get cracking yet.

So I stuck my head in the sand for a while longer, and the next time I came up for air I noticed that consumer DV had made editing so cheap and easy that pretty much anyone could do it for little more than the cost of a decent PC. On top of that, lots of people had been putting it to use and distributing their little epics all over the internet!

Yes, the world had finally opened itself up to those with a vision. All it takes is a cheap DV camera, a PC and a modem and you can be a star. Hell, with LightWave you don't even *need* the camera anymore! I've seen plenty of short 3D films make their rounds over the 'net. How many little movies have you had forwarded to you via email? How many memorable MPEG's are sitting in your 'movie' directory? Someone had to make those things, you know!

Hollywood abounds with tales of young hotshots who got their big break because their AVI found its way onto the screen of the right people. The day has come when literally nothing stands between your great idea and the audience waiting to be entertained by it. All you need is some creativity and maybe a little talent.

Oh, and one other thing - motivation.

New technology is making it really hard to come up with excuses for not getting our collective asses in gear. The tools are all in place for sucking that great idea out of our heads and actually putting it in front of other people; it's gotten to the point where the only effort it takes is a few mouse clicks!

How long am I going to sit back and watch other people use these tools and do the things I've always dreamed of?

How long will *you*?

Do me a personal favor and help at least ONE bright new star get her start: visit Mara's website (www.marasong.com). and listen to her music. Tell her Mojo sent you!

www.newtekniques.com

6. Vision

NewTekniques can help give you a vision that will help take you and your work to the next level. Top Hollywood FX artists, give you important advice.

7. Design

NewTekniques invests strongly in layout design to make your reading more enjoyable.

8. Dedication

NewTekniques is not only dedicated to every reader, but the staff of ***NewTekniques*** are active participants in the various LightWave and Toaster forums.

9. Spirit

NewTekniques is a strong part of the NewTek community and spirit that surrounds it. All the columnists and staff interact regularly with readers out of a genuine desire to be helpful.

10. Reliability

NewTekniques has never missed a shipping date and is consistently delivered on time.

Hear from industry experts, meet some new ones, and maybe even *become* one...with NEWTEKNIQUES magazine. From news and information to tutorials and insider tips, NEWTEKNIQUES will enhance your expertise and spark your imagination! Subscribe right now!

> **"If you are going to buy one magazine to help you up the learning curve of 3D Design and animation, this is the magazine (NewTekniques) to buy."**
>
> — 3D Interactive.

SUBSCRIPTION CARD

NewTekniques

○ **YES! Begin my NewTekniques subscription immediately!**
○ **no**

131 W 1st St., Duluth, MN 55802-2065
Phone: 218-723-9477 • Fax: 218-723-9417

○ Bill Me
○ Charge my subscription to:
○ VISA ○ MasterCard ○ American Express

U.S. & POSSESSIONS	$32.00
CANADA & MEXICO	$42.00
ALL OTHER COUNTRIES	$58.00

Payable in U.S. funds drawn on a U.S. bank

Acct. # ____________________ Exp. Date ____________

City ____________________

State ____________________ Zip ____________

SIGNATURE ____________________ Date ____________

Name (PLEASE PRINT) ____________________

Title ____________________

Company Name ____________________

E-Mail Address ____________________

*Address ____________________

City ____________________

State ____________________ Zip ____________

Phone (____) ____________________

Fax (____) ____________________

*Is this your home address? ○ Yes ○ No

Start Your Subscription **Immediately!**

Fax your subscription card back to us at: **218-723-9417**

or

Subscribe on our website at: **www.newtekniques.com**

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO 665 DULUTH MN
POSTAGE WILL BE PAID BY ADDRESSEE

NewTekniques
131 W 1ST ST
DULUTH MN 55802-9882

Please fold along perforation and tape at top

www.newtekniques.com

www.newtekniques.com

10 Reasons to Subscribe to NewTekniques Today!

1. Content
NewTekniques delivers more information, tips, news and tutorials relating to NewTek products than any other publication.

2. Knowledge
NewTekniques has the top Hollywood FX artists and industry leaders sharing with you the same information that got them to Hollywood!

3. Insight
NewTekniques dissects some of LightWave's top Hollywood FX shots so that you know how the shots are achieved.

4. Simplicity
Tutorials in *NewTekniques* are presented in an easy to follow step-by-step process, making it easier for you to accomplish the end goal.

5. Support
NewTekniques is actively involved in supporting the NewTek user community and every reader. One of the ways this is accomplished is through the huge *NewTekniques* Web site and *NewTekniques* Mailing List.

If you hate rendering trees, **you'll love realtrees,™** a LightWave plug-in you've got to see to believe!

Point and click. That's how easy realtrees makes it to add photorealistic trees to your animation. And you can view them from **360 degrees around the Z-axis.** Rendering times are slashed, because realtrees doesn't rely on heavy meshes. Each tree is only one polygon when you render it. **One lousy polygon!** And there are hundreds of such trees to choose from in our growing library. So, stop reading this ad and start downloading your free demo now. It'll make you **fall in love with trees all over again.**

www.RPCnet.com

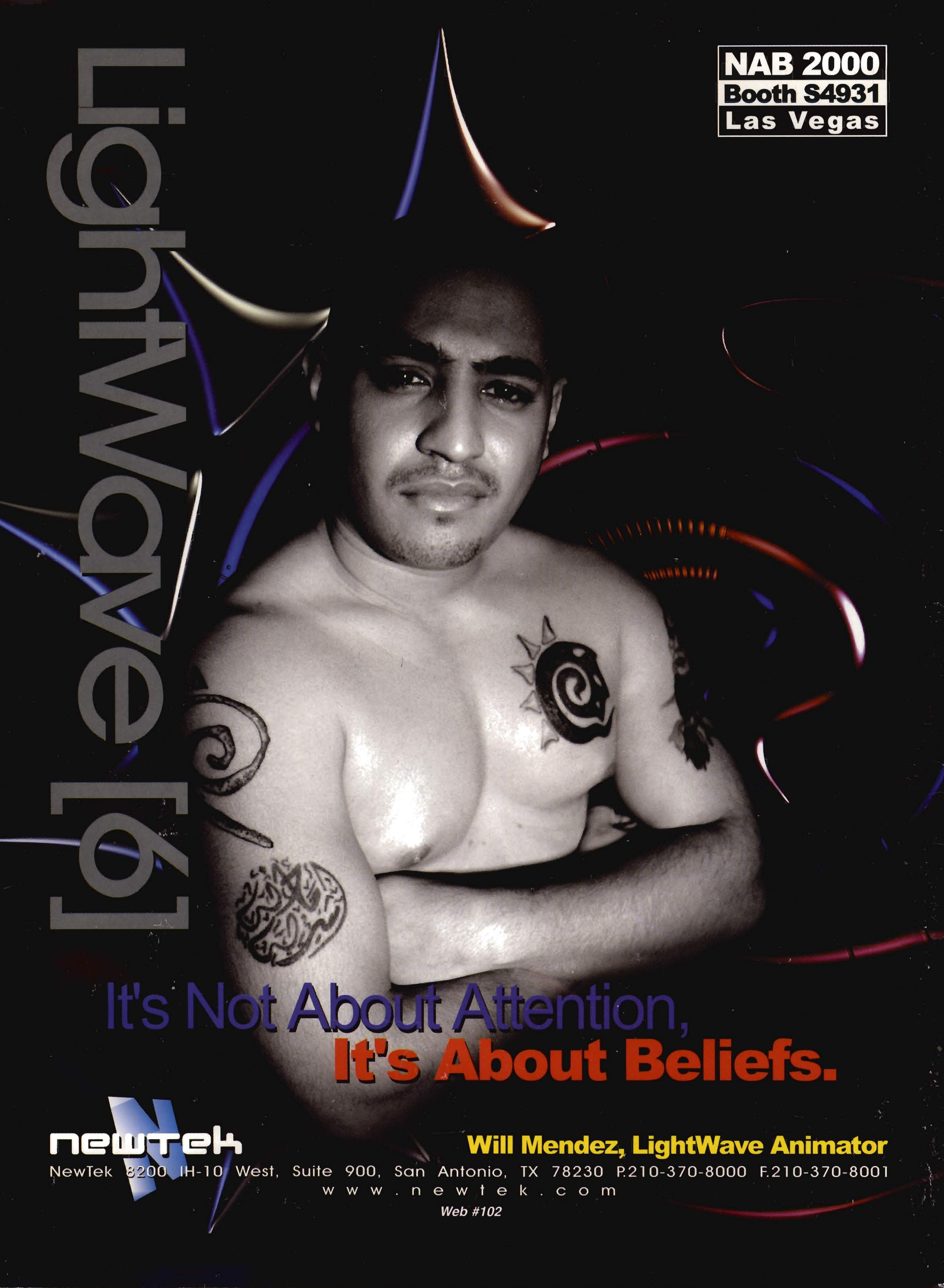
realtrees and realpeople are content libraries for the RPC plug-in, all developed by ArchVision

P.S. Check out realpeople while you're at it.

ArchVision™ by design

Phone 606.252.0918. Toll-free 888.321.4406

Web #128


LightWave [6]
NAB 2000
Booth S4931
Las Vegas
It's Not About Attention,
It's About Beliefs.
newtek

Will Mendez, LightWave Animator

NewTek 8200 IH-10 West, Suite 900, San Antonio, TX 78230 P.210-370-8000 F.210-370-8001
www.newtek.com
Web #102